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THE

Indian Medical Gazette,

A MONTHLY RECORD

OF

MEDICINE, SURGERY, OBSTETRICS, JURISPRUDENCE,

AND THE

COLLATERAL SCIENCES;

AND OF

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STORAGE

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ORIGINAL COMMUNICATIONS.

ANÆSTHETIC LEPROSY; WITH ESPECIAL REFERENCE TO ITS DIAGNOSIS AND TREATMENT IN THE EARLIER STAGES.

By J. N., M.A., M.D.

(Continued from Vol. II., page 291.)

B.—The Medical or Aceto-Carbolic Treatment.

Two points in my hypothesis of the pathology of the disease led me to adopt the following practice:—*First*, as to the particular tissues involved—they appeared to me to be the white fibrous or gelatinous. Casting about for an agent which should affect these structures to the exclusion of the albuminous, I determined to give at least a trial to acetic acid. *How* it would affect the diseased tissues, I could not of course venture to guess. And now that experience has shown that the experiment was a happy hit, I leave it to others to show what is the *modus operandi*. At first, dilute acetic acid was tried alone, and with very speedy effect in relieving the symptoms, especially the distressing sense of heat. *Secondly*, supposing the morbid agent to be a specific virus of the zymotic sort, it seemed advisable to employ a substance capable of destroying the vitality of low organisms; in short, an antiseptic or antizymotic. For this express purpose I sent for some sulphite of soda. But before it arrived I obtained a small quantity of pure, crystalline carbolic acid, which I used for a time in the treatment of abscesses, in accordance with the invaluable suggestion of Professor Lister. It now occurred to me that in carbolic acid I had the very thing which I wanted—an antizymotic of the greatest possible efficacy. But as I had never heard at that time of this substance being administered internally, I began cautiously with doses of one drop, largely diluted. Its ready solubility in acetic acid, which I had already begun to use, proved very convenient, rendering its administration both easy and elegant. Finding that the effects are uniformly beneficial, I have since increased the dose in some cases to four and even five minims. As for the sulphite of soda, I confess that I have never even tried it. The aceto-carbolic treatment has been so uniformly satisfactory that, when the sulphite arrived, I felt unwilling to make any change.

The following formulæ may be prescribed as soon as a diagnosis of simple, uncomplicated leprosy is satisfactorily made out. Although crystalline carbolic acid is to be preferred, it is by no means essential. For a long time past I have been compelled to use the impure acid of commerce.

No. 1—Aceto-Carbolic Solution.

℞ Acid. Carbolic	..	..	♏xlviii.
Acid. Acetic. (B. P.)		..	ʒiii.
Quin. Sulph. ..	..	..	gr. xxx.
Spiritûs Sacchari	..	..	ʒvi.
Syrupi, Simplicis	..	..	ʒiii.
Aquæ,* ad	..	..	ʒvxiv. M

Signa. ʒiss bis die, post cibum sumendæ.

N.B.—For a patient in an advanced stage, it is best to begin with a smaller proportion of acetic acid, say ʒi or ʒii.

The rum used may be either that issued by the Commissariat, or what is manufactured at Simla and other European distilleries. Each dose should be diluted, when taken, with twice or thrice its own bulk of cold water; nor should it ever be taken on an empty stomach, unless in much smaller doses. The treacle sold in most bazars under the name of *shírá* is very cheap and very good as a substitute for syrup. Of the quinine it should be said that, although it is by no means an essential ingredient of the solution, it is yet well to add it to the first few bottles, and occasionally afterwards. It has a most excellent effect at the first start, in improving the digestion and appetite. The *dose* is most conveniently regulated in dispensary practice, by having on hand some hundreds of earthenware measures, of various capacities, such as ʒi, ʒiss, ʒii, &c. These can be got of any *kumhár* at a trifling cost, and thus each patient may be furnished with a fresh one. For those whose caste will not permit them to drink out of any except metallic vessels, tin measures can be made for a pice or two a piece.

No. 2—Laxative Podophyllin Pills.

℞ Podophyllinæ	..	..	gr. viiss.
Extracti Aloës	..	..	
Extr. Taraxaci	..	..	
Pulv. Ipecacuanhæ, *aa*,	..	..	gr xlv.
Ol. Cajuputi vel ol. Menth. pip.			♏xxx.

Liquoris Potassæ, q.s. ut fiat massa in pil., xxx. dividenda. *Signa.* Pilula i, nocte sumenda.

N.B.—No liquid should be employed other than the liquid potass, which again should be added rather *in excess*. The excessive fluidity of the pill-mass will disappear soon, if it is beaten thoroughly, for a minute or two, in a heavy iron mortar.

These pills afford the best cholagogue laxative for ordinary hepatic derangements, with which I am acquainted. It is on account of this property that they are so useful in the treatment

* In case there is on hand an insufficient supply of acetic acid, substitute vinegar (the stronger the better) for the water, and (the words acid. acetic ozs. iii being omitted) order "aceti ad ozs. xxiv" instead of "aquæ ad ozs. xxiv." This, however, is less efficient, for several reasons.

of leprosy, in which disease there is almost invariably great functional derangement of the liver. Besides this, the acetic acid has a tendency to constipate the bowels. Certain it is that these pills seem to be needed, since, though used daily for many weeks in succession, they yet hardly ever produce any unusual degree of looseness, being followed generally by one or two very healthy evacuations daily. Without this or some similar laxative, I should certainly be unwilling to administer the aceto-carbolic solution long. Like the solution, the pill should be taken shortly after a meal. The best time is about an hour after dinner, *i. e.*, at the patient's bedtime.

Under the treatment above described, there is a steady and rapid amelioration in all the symptoms. The tongue grows cleaner, and there is positive evidence of the favorable action of the remedies on the digestive tract. There is a marked improvement in the nutritive process, seen especially in the state of the skin. Instead of the characteristic tendency towards the formation of blebs and sloughing ulcers, there is, in all that have already formed, a striking tendency towards cicatrization. From being muddy-looking, sallow, and œdematous, the skin grows clear and elastic, assuming a wholesome, ruddy, brown tint. The change is sometimes very remarkable, and is brought about with such rapidity as to astonish the observer. One of my earlier patients, who was very far gone when he first came under treatment, was so changed in the course of three weeks, that I at first failed to recognize him. The changes in the skin are accompanied with others equally important. The mind, from being dull and lethargic, grows brisk and energetic. The patient feels less drowsy; his animal vigour returns; and there is a buoyancy and almost an exhilaration of spirits, to which he had long been a stranger. There is a real accession of strength. He can now walk long distances with comparative ease. The cardiac disturbance diminishes greatly, and the patient ceases to suffer, as he formerly did, from dyspnœa after the least exertion. Meanwhile the positive abnormal sensations of heat, tingling, formication, and pain rapidly decrease, and in most patients disappear. On the other hand, the negative feature of *numbness* persists very obstinately. It is true that, in several cases, sensibility has been restored slowly to the patches nearest the trunk. The area of anæsthesia is always diminished. It disappears inversely as it came, the hands and feet being the final strongholds. In none of my cases has complete sensibility been restored to both hands and feet. Yet, as there is marked progress, there is every reason to hope for that result, if only time enough be given. Before closing this account of the internal remedies which I have used, I should say that whenever there is any very great degree of hepatic disturbance—pain, with torpor—I add to the aceto-carbolic solution dilute nitro-hydrochloric acid, in the proportion of about ♏v. to each dose. It appears in such cases to have a happy effect, and its use should be kept up for weeks, or even months. In a few cases, after employing the aceto-carbolic solution for some weeks with advantage, minute doses of strychnia have been added. All that I can say of it is that, when thus administered, strychnia has seemed to do no harm, and possibly it did good. But in doses larger than one-fortieth of a grain it has almost always seemed to injure the patient. I have again and again known it to cause the utmost distress, rendering the patient anxious, restless, and feverish. The object, I need hardly say, was gently to stimulate the sluggish cerebro-spinal centres. But the state of these is apparently such as to render them unable to bear such direct excitation.

With the administration of the internal remedies above mentioned, the following *external treatment* should be employed. If there are ulcers on any part of the surface, they may be treated with admirable success, whatever their character, by cauterization with a mixture consisting of equal parts of *glacial acetic* and (melted) *crystalline carbolic acids:* a powerful alterative effect is thus produced, and the ulcers usually heal rapidly.

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Besides specific applications
not in every case, furnish the patie
either chaulmoogra or simple poppy or linseed
certain proportion of some antiseptic substance, and direct him to rub it well over the entire surface of the body daily after a hot bath. Tar (vegetable), kerosine, oil of turpentine, and tincture of iodine, all have been employed in this way at various times in different cases. The object is threefold: *first*, to keep the skin soft; next, to destroy any possible parasitic, lichenous growth; and, finally, by the absorption of the fatty and other matters, to promote and alter nutrition. But since the benefit of this inunction depends largely on the observance of cleanliness, and since there is reason to fear that the daily bath with hot water and soap is often neglected, it is just possible that the practice may be productive of as much harm as good.

Counter-irritation is, under certain circumstances, of great utility. In perhaps half the cases I applied a blister (*i. e.*, painted with the linimentum cantharidis. B. P.) over the tender spot between the scapulæ. It seems to do some good yet several cases have done well without anything of the kind; and latterly I have discontinued the practice. But there can be no doubt of the efficacy of blisters in relieving pain, be it in the heart, or in the liver, or in the limbs. Excessive cardiac disturbance is promptly relieved by a large blister over the præcordia. Similarly, tenderness in the liver is relieved by a blister over the seat of the pain. The deep rheumatoid pains of the joints, especially of the knee, when accompanied with swelling, may be treated in the same way, though the relief is not so certain. In all these cases I have been in the habit of mixing an alcoholic tincture of the rhizoma of *plumbago rosea* (lál chitrá) with the linimentum or the acetum cantharidis. The action of the latter is thus rendered both milder and more permanent. There is certainly something peculiar in the action of this root upon the *skin*, which it affects in a way peculiar to itself. One of its effects is to leave a dark stain, both in Europeans and Natives. Its relations to leprosy deserve investigation. One patient told me that he had been cured of anæsthesia for months by a short course of powdered *chéchá* (as it is here called), taken in doses of a drachm or so twice or thrice a day. Topically, it seems to relieve numbness of short standing. In order to obtain its full effects, it must be kept on long enough to produce vesication.

The *complications* of leprosy demand some notice in connection with its treatment.

Anæmia is sometimes so great as to call for the use of iron. The simpler the preparation used the better. Hence my favorite is simple *ferrum redactum*, or *ferrum per hydrogen*. This may be very conveniently made into pills, with a semi-

* The same remark applies to the "aceto-carbolic" solution, for which a formula is given above. The very same formula, without carbolic acid, I have found most useful. There is no doubt that the acetic acid is the *chief* agent. At the same time I believe that the carbolic acid increases its value.

solid extract of chiretta* as a vehicle. However, it can matter but little what particular preparation of iron is used.

Cutaneous diseases are apt, as has already been said, to complicate leprosy. It is in cases of *this* kind, I suspect, that arsenic has achieved something of a reputation Certainly nothing has, in my hands, proved more inefficient than arsenic for the removal of the genuine, essential symptoms of simple anæsthetic leprosy. If the *liquor potassæ arsenitis* be used, it is well to prescribe it with tincture of the perchloride of iron and syrup, so adjusted that it may be taken in ℥i or ℥ii doses. I prefer the following formula, however, in all those skin diseases in which arsenic seems to be indicated. The arseniate of iron agrees well with the stomach. The black pepper is introduced in imitation of the Asiatic pill, and is thought to help the action of arsenic, as well as to render it more acceptable to the stomach. Finally, the madar certainly promotes diaphoresis, and has besides a reputation of its own in the treatment of the cutaneous affections of syphilis and leprosy. It may not be all that it is wanted to be, but it is cheap, and does no harm.

℞					
	Ferri Arseniatis	..	..	..	grs. iss.
	Extr. Madar†	..	..	..	grs. xv.
	Ferri reduct	..	..	..	℥ss.
	Pulv. Pip. nigr.	..	..	..	℥i.
	Syrupi	..	..	..	q.s.

Fiant pil., xxx. Sumantur Pil., ii. bis die, post cibum.

Rheumatism and *Neuralgia* cannot always be distinguished from the pains of leprosy, although, no doubt, they often seriously complicate the latter. However, whenever pain is severe, I do not hesitate to give the patient the benefit of hypodermic injection. And this, notwithstanding the opinion of Mr. Charles Hunter, ought, I feel certain, to be as near the seat of pain as possible. The triple compound of alkaloids, recommended by Brown-Sequard as the best antagonist of pain, I have always found exceedingly satisfactory, and more lasting in its effects than morphia alone. I generally inject, by means of Wood's syringe, acetate of morphia, gr. ¼, and sulphate of atropia and of aconitia, gr. $\frac{1}{30}$, each, the solutions being so adjusted that each of the above doses is contained in four minims, making a total of only ♏xii in all.

We should be on the look out for true *scurvy*, and meet it, when detected, by ordering a suitable diet with lemon-juice, &c.

If *syphilis* co-exist with leprosy, as is often the case, the prognosis becomes very serious; and if, in addition to these evils, the patient have undergone a long course of salivation at the hands of a Baid, his case is well nigh hopeless. It is possible, however, that *after* a course of iodide of potassium with chalybeates and bark, the disease may prove amenable to the treatment that has been detailed in this paper, especially if the patient can afford to give himself the comforts demanded by hygiene.

It is right to mention, before concluding, that, in all, 65 cases of leprosy have come under the author's care within the last 14 months, *i. e.*, 35 cases were treated before the employment of the aceto-carbolic solution. With the exception of a very trifling benefit derived by a few of these from the use of nitrate of silver, all of the 35 cases were treated unsuccessfully. The remedy tried oftenest and longest was arsenic. Some of the patients persevered in the use of it for months, but, to the last, seemed no better in any respect, and at last gave it up in despair. Beside the nitrate of silver, iodide of potassium was tried in several cases. At last one patient persevered for a long time in taking pills of the nitrate of silver, and a solution of the hypophosphites of lime and of soda. In none of these cases was there any real benefit. The only result was that men affected with leprosy ceased to have any confidence in me, none of my old patients having returned for the new treatment. But for this great want of success at the outset, I should almost certainly have on hand more patients now.

In now taking leave of his subject, the author cannot refrain from expressing his earnest hope that some, at least, will be found willing to test, on a larger scale than he has been able to do, the plan of treatment here advocated. And if extended trials shall fail to establish the truth of his conjectures, he is perfectly content to have them forgotten, provided only that the profession in India will not rest until the pathology and treatment of leprosy shall have been placed at last on a sure scientific basis. On the former of these subjects, attractive though it is, I have thought it best at present to say nothing, feeling that as yet the data are insufficient for the construction of anything but crude hypotheses; and as to treatment, the suggestions here made are of recent date, and will almost certainly require to be modified, as their defects are revealed by time and a wider experience.

* This is a cheap and efficient substitute for extract of gentian, and may be made by boiling down the officinal *infusum chirettæ*, made at 120° Fahr.

† The extract of madar is made by evaporating a saturated acetated tincture of the rhizoma of *calotropis procera* (?). Roughly, grs. vi are about equivalent to grs. xx of the powder. Either this extract, or, still better, the tincture itself, is an excellent substitute for ipecacuanha, in dysentery. A couple of drachms of the tincture, with 20 minims of laudanum, and two or three drops of carbolic acid, is a mixture which the most irritable stomach is almost sure to retain with ease, all the happy effects of ipecacuanha being secured.

NOTES ON LADAK IN 1867.

BY ASSISTANT-SURGEON HENRY CAYLEY,
On special duty, Ladak.

(Continued from Vol. II, No. 11, page 268.)

I propose now to give a short account of the diseases of the country, but would first observe that, on reaching Leh at the end of June, I at once established a dispensary, that is, I invited the attendance of all sick people, and treated all who came. At first numbers applied, then, owing to the obstruction secretly thrown in the way by the Cashmere officials, the attendance almost entirely ceased; but after a short time I managed to put a stop to all active opposition, and the attendance of sick of all classes, both from Leh and its neighbourhood, and from distant places, at once revived. I had with me a hospital compounder as an assistant, and a small supply of the most necessary medicines and instruments. Two of my small tents were soon converted into a hospital. A grove of poplar trees served as an operating theatre, and for surgical assistants numerous Ladaki amateurs were always at hand, who took great interest in the proceedings; and thus, in rather unpretending fashion, was opened the first hospital in Ladak.

At the same time, an opposition Dispensary was opened under the charge of a Hakim from Cashmere, and for a time the patients on their way to me were forcibly stopped and taken there for treatment; but as soon as this system was abandoned, the attendance at the Maharajah's Dispensary entirely ceased; for the people of Ladak do not believe that any good thing can come out of Cashmere.

There are a few indigenous "medicine men" who travel about with a few drugs in a wallet, and treat disease by the light of inspiration, or chance. They complain of the poverty of the land, and their unrequited services. They, too, experience the truth of the lines regarding the Doctor, that—

> "When the cure complete, he seeks his fee;
> The Devil seems less terrible than he."

The following list shows the diseases which have come under treatment during July and August:—

Fevers	66	Admissions.	Staphyloma	1	Admissions.
Ophthalmia	45	,,	Entropion	4	,,
Diarrhœa	2	,,	Cornetis	1	,,
Dysentery	3	,,	Bronchitis	16	,,
Parotitis	1	,,	Colic	10	,,
Tonsillitis	2	,,	Constipation	2	,,
Laryngitis	3	,,	Dyspepsia	61	,,
Rheumatism	38	,,	Hepatitis	1	,,
Syphilis, primary	5	,,	Caries of teeth	32	,,
Do., secondary	20	,,	Gumboil	1	,,
Gonorrhœa	8	,,	Spermatorrhœa	1	,,
Phymosis	1	,,	Ascites	1	,,
Orchitis	3	,,	Eczema	1	,,
Scorbutus	7	,,	Lepra	2	,,
Scabies	1	,,	Ulcer	16	,,
Anæmia	1	,,	Abscess	1	,,
Carcinoma	6	,,	Sinus	1	,,
Fatty tumours	2	,,	Curvature of spine	1	,,
Lupus	1	,,	Contusion	5	,,
Scrofula	1	,,	Fracture of ribs	1	,,
Paralysis	4	,,	,, of finger	1	,,
Neuralgia	17	,,	Frost bite	1	,,
Cephalœa	3	,,	Poisoning	1	,,
Deafness	8	,,	Other diseases	12	,,
Cataract	7	,,			
Amaurosis	1	,,	Total	430	Admissions.

The list is a long one, and shows, I think, pretty nearly all the varieties of disease occurring at the time. The majority of patients were of course from Leh and the surrounding villages, but many came from far.

I will here notice a little in detail some of the principal diseases in the list, at the same time remarking on some others conspicuous by their absence.

Fevers appear to form a larger proportion of the sickness, but the 65 cases were nearly all of a most trifling nature, the attack lasting only two or three days, and generally depending on indigestion, cold, exposure to the sun whilst at work, standing in cold water, and such like causes. Except in pilgrims and merchants, and others coming from the plains, I saw nothing approaching in character to malarious intermittent, and I hardly believe the disease to exist, in spite of the whole of the land in the villages being almost constantly under water and exposed to a powerful sun; nor have I seen anything like the continued and recurrent fever of Europe. Most of the cases of fever seemed to be benefited by an emetic or brisk purge, constipation and disordered stomach being generally prominent symptoms.

Ophthalmia is very common, hardly ever appearing in the acute purulent form, but generally of a very chronic character—the result of a low form of muco-purulent inflammation of the conjunctiva—and lasting weeks, months, and even years; leading to great thickening and œdema of the lids, and extreme vascularity and roughness of their mucous membranes; causing an opacity of the cornea, and often producing entropion, of which affection I cured several cases by operation. I found that treatment by astringent lotions, the application of sulphate of copper to the inner surface of the lids, and nitrate of silver painted on outside, was often effectual; but in many cases the disease was too confirmed for any rapid relief to be obtained, and patients do not often continue to attend unless they quickly perceive the effects of the treatment. The disease appeared in many cases to have arisen from the glare of the snow whilst crossing mountain passes (as a protection from which the natives often wear snow spectacles made of plaited hair); in others, from exposure to the intense glare and dust and heat of the sun, in the barren sandy deserts which extend over so much of Ladak.

Diarrhœa and *Dysentery* are almost unknown. The two cases of the first occurred in servants from Cashmere and Kullu; and of the three cases of dysentery, one occurred in a sepoy from Cashmere, and another seemed to depend on organic disease in the abdomen.

Cholera has not reached Ladak, though this year it has been raging in Cashmere, and came very close to the frontier, but it never surmounted the pass between the two countries; and as there was constant intercommunication, I can only suppose that the poison of the disease cannot produce its effects at an altitude of 10,000 feet above the sea. The cholera germ may be brought, but the other necessary condition for its spreading is very probably absent—the "capacitas morbi," as Professor Haughton calls it,—on the part of the person exposed to its influence.

Small-pox has several times ravaged Ladak. Ten years ago it spread through the whole country, and killed numbers; the whole population was inoculated in that year by the Lamas, and since then the disease has not occurred, excepting in a few cases last year. In former years the custom was to expose the patients with the disease out on the mountain sides, where the friends brought them food, &c., until they either died or got well. It was a somewhat cruel, but, at the same time, admirable, plan for lessening the spread of the disease; and in this climate it would really be better for the sick to be out in the open air, than shut up in a close dwelling. Since the general inoculation ten years ago, the dread of the disease has greatly diminished. Vaccination might, I believe, be introduced without difficulty.

The six cases of *Tonsillitis*, *Perotitis*, &c., were not severe, and were apparently caused by cold. Amongst the European travellers up here feverish colds and sore-throats are rather prevalent, judging from the liability to such attacks among the few English who have visited Leh this year. The cause I believe to be exposure to the cold air, which is felt on the very hottest day, and which often gives a sudden check to perspiration.

Rheumatism and *Neuralgia* are very common; the rheumatism usually affects the muscular and tendinous structures, and not the joints and ligaments; it is generally very chronic, and lasts for months and years, causing constant and severe pain. The neuralgia is of an allied character, but only a particular nerve, or a set of nerves, is affected, such as the sciatic, or the nerves of the face and scalp. In many cases there is a tendency to scurvy. I think that these diseases are in great measure to be attributed to the fact that people work day after day with their feet in cold water, whilst engaged in irrigating the fields; and, in addition to this, are insufficiently fed and clad, and, when away from home, frequently sleep out in the night air. The diseases are very obstinate, and very troublesome to treat. In many cases there was syphilitic history.

Venereal Diseases are very prevalent; 37 cases applied for relief in all. The syphilis was not of a very severe character, and the ulcers seldom took on a sloughing form, although fostered in the highest degree by dirt and neglect. The constitutional symptoms were chiefly ulcerations in the throat, mouth, and tongue; nocturnal pains in the bones; enlarged occipital glands; and often secondary eruptions on the genitals and other parts. In only two cases did I see any extensive destruction of tissue from sloughing, and never any dangerous complications. In my opinion this disease is, in spite of the dirty habits of the people, if not less prevalent, certainly less severe than in the plains of India or in Europe. May not the dryness and antiseptic properties of the air have something to do with this?

Gonorrhœa occurred chiefly among the sepoys. I treated three cases of orchitis by tapping the tunica albuginea with a trocar and canula during the acute stage, and then strapping the testicle; in each case the cure was almost immediate.

Leprosy.—Of this affection I did not see a single case; the two cases called "lepra" were skin diseases, not allied to the leprosy of Hindustan.

Scurvy, seven cases. Besides these many of the sufferers from rheumatism and indigestion were more or less scorbutic. During the early part of the summer the majority of the sick showed some sponginess of the gums, owing, doubtless, to the absence of fresh vegetables and other anti-scorbutic elements in their diet. In the upper parts of Ladak and about Leh, where fruit is not plentiful, the food from October to June consists almost entirely of *suttoo* and water, and a few dried herbs; and I certainly saw many more cases of spongy gums in June and July than later in the year, when wild herbs and common vegetables were plentiful. The prevalence of scurvy in this

country proves that it can be produced by dirt alone, without the addition of crowding, confinement, and bad air; but none of the cases were as severe as those which one sees in jails, or among sailors or soldiers at sea.

With regard to parasitic diseases, I have only seen one case of itch, and that in a Cashmere sepoy; and I believe that intestinal worms are unknown. Goitre and cretinism, which one would expect to find so prevalent in a country where the people live so often in narrow confined valleys, and drink only snow water, are very rare. I have travelled through the greater part of Ladak, and have seen very few goitres, and those very small ones; and I have seen no cretins, and hardly an idiot; although in the lower Himalayan ranges, as at Kangra, Kullu, and about Simla, goitre is very prevalent, and cretins not uncommon. In Ladak the mountains are chiefly granite, clay, and mica slate, and metamorphic rocks; there is very little limestone. Has the absence of lime in the water anything to do with the absence of goitre? I may notice also that I have not heard of a single case of gravel or stone; and did the disease exist, it would certainly have been brought to my notice. The water, besides containing no lime, is almost everywhere more or less impregnated with soda salts; can this in any way prevent the formation of goitre and stone in the bladder?

Tumours.—Of the eight cases five were malignant, three of which I removed by operation; and three which I also removed were fatty. Cancer would thus seem to be rather prevalent.

Cataract is decidedly common in old people, and nearly all that I saw were cases of hard senile cataract. I have operated on the eyes of six patients with fair results. I operated by the linear incision, as recommended by Dr. Macnamara. The other eye diseases presented nothing remarkable.

Bronchitis and lung diseases are rare and of a mild nature. I have seen nothing resembling phthisis.

Dyspepsia, of a most obstinate and troublesome nature, may be called one of the chief diseases of the land, and I heard the same of Lahoul from the Moravian Missionaries there. The symptoms are generally constipation, weight and pain in the stomach, especially after eating, distention, and pain in the chest, headache, languor, and many other subjective symptoms,—all due to the same cause, and often lasting for years and causing very great distress. It is doubtless caused by bad diet,—the everlasting and unvarying *suttoo*. One sees a man with a lump of uncooked dough as big as his head, and this he swallows in large pellets, washing them down with cold water, and this constitutes his sole diet for days together. The mere sight conjures up in one's mind that bugbear of the conquerors of India—indigestion and all its attendant horrors.

The number of decayed teeth one meets with is remarkable. The sufferers allow them to be extracted without any hesitation. The people show very great fortitude in enduring pain. Boils, abscesses, sores, and skin diseases are all very infrequent, the last especially so. All wounds seem to heal rapidly, in spite of neglect.

Of the total number of 430 patients treated, 329 were males, 95 females, and only six children under 12 years of age. As I have before noticed, children do not abound; and as there never was the slightest objection made to bringing them before me, I can only conclude that they are remarkably free from disease. There has been a daily average attendance of 30 patients during the two months. I am not at present able to give any information on the subject of parturition and infantile mortality, nor on that of the birth and death rates of the people; and besides I have, I fear, already extended my notes far beyond reasonable limits.

September 14th, 1867.

STRAY NOTES ON CHLOROFORM.

BY W. J. ELMSLIE, M.A., M.D.,

Medical Missionary, Kashmir.

I. *Evaporation of Chloroform.*—Quite recently I had occasion to enquire of a friend of mine, who had just come from the plains to spend the season in Kashmir, if he had any chloroform in his possession. He replied that he had, and immediately went off triumphantly to fetch his little portable medicine chest. Fancy his astonishment and disappointment when, on examining an eight-ounce bottle which he had caused to be filled with the invaluable anæsthetic before entering upon his journey to the hills, he found it completely empty, the chloroform having entirely volatilized. If either my friend, or the chemist who supplied, the chloroform, had been acquainted with a little practical fact this expensive waste and vexatious disappointment would have been most effectually prevented. The specific gravity of chloroform is about 1·5, being therefore about one-half as heavy again as pure water. We can take advantage of this well-known fact to prevent the evaporation of my chloroform, by pouring a small quantity of pure water on the top of the chloroform, sufficient to cover the surface completely. The water being so much lighter than the anæsthetic, floats on its top, and thus effectually prevents its evaporation. By the adoption of this very simple contrivance, the saving in chloroform will be considerable. There is one objection, and only one, to the use of pure water for this purpose, and that is, that chloroform is slightly soluble in water. Professor Christison states that one part of chloroform is soluble in two thousand parts of water. This solubility is therefore so very slight that the objection to the employment of water for this purpose is altogether inconsiderable, especially when we remember that the quantity of water required to cover the surface of the chloroform is proportionately so small. It is advisable to employ the same water till it has evaporated, and consequently requires to be renewed, for the obvious reason that it is already saturated with chloroform; any water that may flow out of the bottle along with the chloroform should therefore be immediately returned. The adoption of this very simple contrivance in a hot climate, like that of India, will lead to no inconsiderable saving in the consumption of chloroform in dispensaries and hospitals, where much of this expensive and indispensable anæsthetic is annually consumed.

II. *Exhibition of chloroform in the dressing of wounds in children.*—Old and young in Kashmir are in the habit of carrying about with them, almost continually, portable earthenware braziers, which they call *kangris*. This custom gives rise in the adult to epithelioma, while in the very young severe and extensive burns are of frequent occurrence. A case of this nature happened some time ago. Several days since the mother of the little sufferer brought him to the Medical Mission Dispensary. The little fellow's right arm was united to his side from the shoulder to the elbow; chloroform was administered to him, and the binding cicatrix divided. So noisy, restless, and terrified is he whenever he is brought into the dispensary to have the wound dressed, that I deemed it advisable, both for his comfort and my own, to exhibit chloroform to him. We are thus enabled to dress the wound with more accuracy and comfort to ourselves, and with no pain to the little patient. I would strongly recommend this practice. It is noteworthy that the state of anæsthesia in such cases does not require to be so profound as when a surgical operation is about to be performed; so that comparatively little chloroform is needed.

III. *Chloroform in setting of fractures.*—I am at present attending another young patient in connection with the Medical Mission Dispensary, Sirinagar. Two boys were, three weeks ago, on a mulberry tree eating the fruit. The branch on which they were sitting suddenly broke, and they fell from a consider-

able height upon the hard ground. One of them was but slightly bruised. The other, my patient, received simple fracture in the middle of the shaft of the left femur. At first I purposed setting the fracture without the aid of an anæsthetic, but when the boy began to wince and to complain, on my very gently manipulating the parts, I changed my mind and exhibited chloroform. I had now such comfort in performing my work, that I have formed the resolution never to set a fracture of similar gravity, either in old or young, without exhibiting chloroform.

IV. *Chloroform in the violent headaches frequently occurring at the cessation of the menses.*—Some time ago a lady, of about 45 years of age, consulted me about a violent headache which every now and then attacked her, and which she described as likely to drive her mad. From the lady's age, and other well-known symptoms, I unhesitatingly came to the conclusion that this very severe periodic headache was due entirely to the cessation of the menses. Her bowels, food, drink, clothing, bodily exercise, mental occupation, and general habits were all attended to, but still the headache continued to embitter her very existence. Knowing that, until this very critical period of life had been passed, it was hopeless to expect a complete cure, I thought of a palliative. A few whiffs of chloroform from a pocket handkerchief were recommended to be inhaled during the presence of the headache. Instant relief was afforded, and life was rendered bearable during the attack. Not only was the pain diminished and rendered bearable, but the attack was also shortened. From 10 to 15 drops of the anæsthetic were amply sufficient at a time.

V. *Chloroform in the severe headache of ague.*—I have, on several occasions, and in a similar manner, administered this invaluable anæsthetic in the severe headache frequently accompanying intermittent fever. The relief afforded has been instantaneous and marked, and most agreeable to the patient.

VI. *Mode of administering chloroform.*—I decidedly prefer the simple and safe mode employed by Professor Sir J. Y. Simpson in the Infirmary of Edinburgh. It is as follows :—

The patient having been properly placed, and the clothes suitably arranged, the nose and mouth should be besmeared with oil to prevent excoriation of the skin, should the chloroform come into immediate contact with them. A pocket handkerchief or other thin linen is then placed over the lower part of the face and chloroform poured upon it, sufficient to wet the cloth over the nose and mouth. As soon as this quantity of chloroform has all been inhaled, and has produced its anæsthetic effect (which will be in 20 seconds after inhalation), a little more is poured upon the cloth, and its effect carefully watched; and so on until the patient is sufficiently anæsthetized for the operation, whatever it may be. Sir J. Y. Simpson is always far more solicitous about the *breathing* of his patients than about the pulse, important though that also be. Stertorous breathing, even in a small degree, is always to be looked upon as an unmistakeable warning of the near approach of danger. The advantages of this mode of administration are, *first*, that the anæsthetic is administered slowly. This is of the highest importance when we remember that it is 20 seconds after inhalation before chloroform manifests its anæsthetic effects, and that the presence of thirty minims of chloroform, at one time, in the blood of the inhaler are sufficient to arrest respiration. *Secondly*, an ample supply of fresh air is always ensured. The handkerchief, or whatever other fine cloth is employed, is so thin that the patient can breathe through it with facility. The importance of this fact cannot be over-estimated when we remember that Dr. Snow ascertained that a patient cannot breathe an atmosphere in which there is more than 5 per cent. of chloroform, without very considerable risk of life. It is a noteworthy fact, as stated by Dr. Sanson, that of 80 deaths from chloroform 78 occurred after its exhibition on a napkin, sponge, or towel, the reason partly being, in all probability, that the necessary proportion of atmospheric air was prevented from entering on account of the thickness of the material employed.

SRINAGUR, KASHMIR, *20th June*, 1867.

A FEW PRACTICAL REMARKS ON THE TREATMENT OF GUINEA-WORM.

BY MEER USHRUF ULEE,

Lecturer on Practice of Medicine in the Agra Medical School.

THE prevalence of this parasite has been associated with the existence of volcanic rocks. It is much more frequent in the coast of Africa and Arabia than elsewhere. In India it prevails in Madras, Bombay, and Rajpootana.

Though guinea-worm frequently causes extensive local inflammation, accompanied by high irritative fever, it is sometimes attended by profuse suppuration, sloughing, or gangrene, and occasionally produces permanent contraction of the knee or other joints; it very rarely indeed ends fatally. I have only seen one fatal case in upwards of two hundred treated by me in the Ajmere Dispensary. This case died from exhaustion produced by the profuse discharge from an abscess in the thigh.

It is more frequently met with amongst adults than among children, and among men than among women. The most frequent seat of the worms is the longer extremities. The issue of the worm from the orbital cavity, scrotum, and tongue is very rare. The localization of the worm in the great cavities is very seldom observed. I have seen a patient who was confined to his bed for seven years, owing to the successive exit of the worms from different parts of the body. The length of the worms varies from 18 to 32 inches in general.

Sometimes the guinea-worm may shrivel and become cretified, and enveloped in areolar tissue. I have seen several cretified worms of long standing situated over the shoulder or on the trunk.

Asafœtida has been much esteemed by Natives as a prophylactic. In my opinion, this medicine and pure water for drinking are the best prophylactics for this disease.

When the loop of the worm can be felt just under the skin, and is not imbedded deep among the muscles, the best plan of treatment is to cut down upon it, when by passing a probe underneath it, the extraction of the whole worm can be made, in a few minutes, with great facility. This avoids the delay attending its natural exit, and the risk of the worm being broken during its gradual extraction.

When the worm is located below the ankle or knee, or in the popliteal region, and at the same time imbedded in the substance of the muscles, and looped round the tendons, we should never attempt to extract it by incisions, otherwise it will surely break, and the consequent extravasation of its contents into the surrounding textures invariably produces considerable inflammation, ending in suppuration. In such cases the best plan is to wait for the natural process of expulsion; and when the usual bullæ have formed, and the worm begins to protrude, it should be gradually extracted in the usual manner, the extracted portion being wound round a small dossil of lint or rag. At the same time, to facilitate the exit of the worm, the surrounding parts should be well rubbed with sweet-oil.

Sometimes the worm breaks during its extraction. This is especially likely to happen when its structure has been softened by the repeated application of poultices, for which reason I prefer to apply plantain leaves to the part, so as to keep it cool and dry. To check the inflammation which follows the breaking of the worm, I have often applied an embrocation composed of equal parts of red minium and country soap. This application, in my practice, never failed to prevent the bad effects of [illegible]ation.

Should much inflammation and suppuration ensue, the case must be treated according to the general principles of surgery.

Agra, 13th November, 1867.

SUMMARY OF METEOROLOGICAL OBSERVATIONS TAKEN AT THE OFFICE OF THE CIVIL ASSISTANT SURGEON OF JESSORE FOR THE MONTH OF NOVEMBER, 1867.

By KENNETH McLEOD, A.M., M.D.,
Civil Asst. Surgeon, Jessore.

I.—Thermometer (standard).—

	Max.	Min.	Med.
At sunrise	73·5	56·5	65·9
At 9·30 a.m.	80·0	69·5	79·2
At 4 p.m.	81·5	70·2	77·7
At 10 p.m.	79·5	63·0	69·6
General result	81·5	56·5	72·1
Maximum thermometer ..	71·0	51·0	62·9
Range of thermometer ..	27·5		

II.—Sun's rays thermometer .. 146·5 90·5 123·5

III.—Barometer (Adie's) corrected and reduced to 32° F.

	Max.	Min.	Med.
At sunrise	30·168	29·126	29·978
At 9·30 a.m.	30·258	29·200	30·079
At 4 p.m.	30·176	29·738	29·988
At 10 p.m.	30·181	29·753	30·022
General result	30·258	29·126	30·016
Range of barometer	1·132 inch.		

IV.—Hygrometer (wet and dry bulb).

	Dry bulb.	Wet bulb.	Tens. of Vapour.	Force of Dew point.	Comp. Humidity.
At sunrise..	65·8	64·8	63·8	·600	9·2
At 9·30 a.m.	75·8	70·6	67·5	·802	743
At 4 p.m...	78·0	70·9	65·4	·683	661
At 10 p.m.	69·2	68·2	66·7	·661	919
Comparative humidity of month					813

V.—Rain 3·971 in. on the 1st; ·058 on the 2nd; ·187 on the 10th; ·015 on the 11th; ·009 on the 12th, ·067 on the 13th, ·353 on the 14th; ·003 on the 15th. Total, 4·651 inches.

VI.—*Wind*—1, General Direction, N., N.W., N.E., S., S.W., S.E., E.

2, Velocity and Force. Instrument broken.

REMARKS

The weather succeeding the cyclone was very fine and warm, but about the 10th of the month a change occurred: the sky became overcast, and the air moist. Occasional showers of rain fell, and the atmosphere was damp and raw. This continued up to the 15th, and was followed to the end of the month by sustained fine weather.

Fevers have been very prevalent during this month, and cholera began to appear in various parts of the district towards the end of it.

JESSORE, 16*th December*, 1867.

STATEMENT OF CONTRIBUTIONS TO THE MUSEUM OF THE MEDICAL COLLEGE, CALCUTTA, BY MEDICAL OFFICERS IN THE MOFUSSIL, FOR THE THREE MONTHS ENDING 31ST DECEMBER, 1867.

By J. A. PURTON CLEGG, M.D., *Assistant Surgeon,*
Officiating Curator.

Number.	Date of receipt.	Donor's name.	No. in temporary catalogue.	Short description of specimen.
1	1st October, 1867.	Assistant Surgeon R. Hervey, M.B., Civil Surgeon, Pubna	749	Skull of a girl of 13, showing extensive fractures and separations of the sutures.
2	23rd October,,,	Assistant Surgeon D. Wright, M.D., Assistant Surgeon, Kishnaghur	751	A number of urinary calculi extracted from the prepuce of a child aged 4 years by Native Doctor Narayan Debey.
3	1st November ,, ...	Assistant Surgeon C. Beasley, Civil Surgeon, Midnapore	761	Malignant tumours removed from the left clavicle and right breast of a girl of 19.
4	11th December ,, ...	Assistant Surgeon J. F. N. Wise, M.D., Officiating Civil Surgeon, Pubna	787	Acute yellow atrophy of liver.
5	16th ,, ,, ...	Assistant Surgeon R. Brown, F.R.C.S.E., Civil Surgeon, Sirsah	790	Large cystic tumour removed from eyebrow.
6	21st ,, ,,	Surgeon J. Rouse, M.D., M.R.C.P.L., F.R.S.I., Bareilly ...	793	Four large calculi from the right kidney, and one from the left kidney.

MEDICAL COLLEGE, 1*st January*, 1868.

CASES FROM PRACTICE.

CASE OF GUINEA-WORM, OR *NARUE* SUCCESSFULLY TREATED WITH CARBOLIC ACID.

By J. N., M.A., M.D.,
Medical Missionary.

As the guinea-worm, among other parasites, is said to abound in Abyssinia, the publication of the following case, at this time, may prove opportune.

A month ago, as I was halting for a few hours at the town of Gurbshánkar, in the Hoshyarpoor District, the arrival of a Doctor Sahib was quickly noised abroad. In the midst of a crowd which flocked towards the tree under which I was sitting, came some one staggering under the weight of a full-grown man, shown by his uniform to be a policeman. I soon learnt that the cause of his lameness was a guinea-worm, from the presence of which he had been suffering for several weeks. The outer end was, as usual, wrapped tightly around a stick, and protruded from the skin just below the right knee, on the outer side of the leg. A probe penetrated easily two or three inches upwards and inwards, after which the channel became too tortuous to be followed, but could, by the patient himself, through the medium of sensation, be distinctly traced deep into the muscular tissues of the thigh. From the orifice, which was small, exuded a constant flow of somewhat ichorous pus. The worm itself was flat, like a slender tape, or strip of parchment, perhaps half a line in breadth: very thin, but seemingly tough. Every day the patient (whose name I forgot to record) had, by gently twisting the stick, succeeded in drawing forth an inch or two of the worm. The portion already on the stick was dry and black, and to all appearance utterly devoid of vitality; yet the patient dreaded nothing so much as that the worm might break. He had previously, he told me, enjoyed excellent health; yet at this time he looked extremely haggard and wretched. The pain, though not very acute, was constant and most irritating, robbing the patient of his rest, and inducing a sympathetic fever at night. He would allow no one but himself to make traction by twisting the stick. In short, had I not seen this case, I should not have believed that a cause, apparently so trifling, could produce such severe constitutional disturbance. Certainly the mental sufferings were very great, and were even more important, he was a perfect cripple. This last, perhaps, was on account of the knee-joint being somewhat involved.

The treatment was very simple, and apparently successful.

well and happy. His leg was free from all pain, and a fresh

inches of the worm, and that, finally, on the fifth day from the application of the pure carbolic acid, the last of the worm had been drawn out, "making in the four days," as he believed,

but right that it should be mentioned.

introducing the acid and making traction alternately,

acid seems to have favoured a speedy healing of the sinus,* which might otherwise have continued to suppurate *long after*

acid the moment the worm appears, may reduce the patient's

acid be not at hand. I would suggest the use of kamila, both

for some time. We all know how it loosens the grip of taenia; and Dr. Hjalton of Iceland has shown very recently, in the

December 31, 1867.

OBSTETRIC CASES.

By A. A. MANTELL, M.D,

Civil Surgeon, Burmah.

1.—*Arm Presentation.*

On the 22nd of May, 1865, I was called to see a Mussulmanee,

At 7 A.M.,

I found the patient suffering severely

On the 23rd May, I

---

* [illegible]

Lancet [illegible]

pains commenced at 5 A.M., the liquor amnii escaped at 3 P.M., and

P.M., and found the child's right arm presenting its palmar

I endeavoured to turn without chloroform, but failed, as the

either foot. The shoulders and head were soon born from the

well.

3.—*Arm Presentation.*

On the 22nd of July, 1865, at 2 P.M., on my return from

I was called to attend a strong, healthy Eurasian, aged 26, the mother of two children. I learnt that

membranes had ruptured at 2 P.M. on the 22nd, an arm and the cord descending. From this time her pains ceased. Two

and on my arriving at the house, I found these Sub-Assistant Surgeons present, who had been called in during my absence from the station. The patient

arm had been nearly severed at the shoulder by the traction of the midwives, and its humerus was fractured. One of the Sub-Assistant Surgeons had endeavoured to turn, but without success. I put the patient under the influence of chloroform, and

pelvis. I delivered her of a small male child by evisceration. The placenta was expelled by the action of the uterus.

On the 24th I was hastily summoned to see her. I found her lying with her thighs drawn up, breathing with difficulty,

were those with tetanus, but [illegible], &c., and succeeded in two days. From this time she progressed favourably.

4.—*Placental Presentation.*

At 12 o'clock on the night of October the 28th, 1865, I was called to see the wife of the Sub-Assistant Surgeon in charge of the Commissariat Department. Her age was 30, and she was in labour with her twelfth child, and had had hæmorrhage during the last 8 weeks of gestation, which [illegible] Before my arrival she was suffering from placental presentation. Labour pains commenced early in the evening, and every time that the uterus acted, large quantities of blood poured from the vagina. My

part or mine would induce her to allow me to examine her. I was

At 11 P.M. on the 29th, by which time she was so much exhausted by loss of blood that the Baboo carried me again. I found her [illegible] very weak state; but in spite of this she resisted, as far as possible, my attempts at examination.

The membranes had ruptured, and the head was descending.

As without chloroform nothing could be done with her, it

I [illegible] with much difficulty, and a [illegible] child was born in about half an hour. The placenta was expelled with the head. No hæmorrhage [illegible], but the patient died from exhaustion soon after delivery.

5.—*Transverse Presentation.*

On the 31st of October, 1865, I attended the wife of a railway employé, who was pregnant with her seventh child. On the morning of the previous day labour pains had commenced but not violently.

On the 31st, at 5 A.M., the pains set in severely, and increased during the day. Scarcely any progress was made, and the os uteri was not sufficiently dilated for me to make out the presentation. In the evening I commenced giving [illegible], and within three hours could detect the mal position of the child. Without delay, and under the influence of chloroform, I turned, but was some time in discovering, although the [illegible] aided well. A good deal of hæmorrhage ensued, and it was necessary to [illegible] at once. The child was [illegible].

The patient's recovery was slow, as she had been in bad health for some months previous to her confinement.

6.—*[illegible] Presentation.*

On the evening of the 7th instant the wife of the Native,

Doctor of Rampoor Haut, aged nearly 15, was taken in labour with her first child. Three weeks previously she had had uterine hæmorrhage. Great care was taken of her, and there was no recurrence of the hæmorrhage until the accession of labour pains, when it was severe, and alarmed the Native Doctor. The vagina was plugged, and the patient brought to Berhampore without delay. During her transit she is reported to have lost much blood. I saw her at 9 A.M. on the 8th; she was anæmic, but had a fair pulse. On examination, I found the os uteri dilated to the size of a rupee, and the placenta was presenting. Turning, under chloroform, was easily effected, as the membranes were intact; but I had some difficulty in passing my hand through the brim of the pelvis, which was small. On this account considerable time elapsed before delivery. The head would not pass the brim, and it was necessary to perforate eventually.

The placenta was retained in spite of vigorous uterine action. On removing it, I found it adherent to the anterior part of the uterus: it was of the battledore variety. Very little hæmorrhage occurred. The os uteri was of good size and well formed.

In the evening the patient had severe febrile symptoms, which lasted all night. Her pulse was 132. On the following day she complained of great pain and tenderness in the region of the uterus, which was much swollen. This condition was relieved by the fomentations. Her fever which came on nightly, was treated with salines and quinine, and she gradually improved. The Native Doctor was obliged to return to Rampore Haut on the fifth day after the operation, and, although against my wish, took his wife with him. I have since heard that she bore the journey well, and is fast recovering.

BERHAMPORE, [illegible] 1867.

NOTES OF A CASE OF TYPHOID FEVER.

By David B. Smith, M.D.,

I. M. [illegible]

I BELIEVE that [illegible] typhoid fever [illegible] of any experience in India who has not had occasion, in this country as in England, to meet with cases of [illegible] fever. Since Surgeon Evatt and others wrote on the subject it has frequently been discussed and described.

I have not seen it in the Bengal Presidency to which I now write [illegible] a good many undoubted cases of the disease, occurring late in the year, running the long course usual in [illegible] and [illegible] by diarrhœa, and by [illegible].

Doubtless, however, [illegible]

The following notes refer to one lately under my care, not [illegible] as [illegible] I have observed, and yet, looked at in its entirety, an unmistakeable instance of typhoid fever.

Lieutenant——, 7½ years' service, (5 in India,) aged 26, of middle stature, rather slight built, fair, clear complexion, and red hair.

My first visit [illegible] was on the 11th November. He had just arrived from Roorkee. Looked thin and weak, but had [illegible] very [illegible] intermittent fever before coming up, but that it was never very bad: that he had come up [illegible] but merely for a short change. I then told him that I thought he was very weak [illegible] a couple of [illegible] He was much distressed on hearing this. Two days afterwards he [illegible] a [illegible] Roorkee, suffering from similar fever: they both recovered very slowly.

On arrival at Mussooree, he appeared to be suffering from mere debility. He occasionally, however, complained of chills and feverishness; and he sat over the fire, or moved about feebly as if in [illegible] He was not confined to bed [illegible] but [illegible] books from the library, which he was strong enough to read.

He [illegible]

Skin generally dry, occasionally moist. *Pulse* about 90; feeble. *Breathing* [illegible]

[illegible]

[illegible]

[illegible]

[illegible] *Mind* quite clear. Wakeful at night.

He was put on good nourishing diet, and took quinine.

I had no actual anxiety as to his recovery at that time. Still he was in an unsatisfactory state. Instead of improving [illegible] complained more [illegible] and became [illegible] nervous.

On my visiting him, day by day, he used to say he [illegible] *think* he had any fever, although occasionally he seemed to have been hot and restless, particularly at night. A low irregularly remittent fever was then on him. But it was not until the 26th November (fifteenth day) that this became really well marked. He had then unmistakeable fever, remitting twice in 24 hours. All his symptoms became aggravated. No eruption could be discovered on the abdomen or chest, although it was [illegible] with this object). The pulse became more frequent and more feeble, the tongue more *red*, *glazed*, and *dry*. Small ulcers appeared on the right margin of the tongue, of a tawny ash colour. His appetite decreased. Thirst became more troublesome, particularly at night. *Still* he had no vomiting. There was now slight tenderness and gurgling on pressure over the cæcum, but no actual pain. There was still no diarrhœa; a threatening of it only appeared about four days before death. There was no enlargement of the liver, and no jaundice. It was only shortly before death that the urine became scanty. It was then either retained or passed involuntarily, not suppressed. Quinine did not check the fever. Profuse sweating occurred, and with increased prostration. The lips became dry, and the [illegible] over the cæcum; deafness supervened; the pupils were widely dilated; there was a bright pink spot on each cheek; and slight incoherence and muttering now occurred. There were also [illegible] dorsal decubitus.

Shortly after this, active, noisy delirium set in. On one or two occasions, when his attendants were engaged, he got out of bed. He talked vivaciously of a number of friends having arrived, and of much gaiety about to occur around him. He also rambled a great deal on the subject of the Abyssinian Expedition, talking loudly about it. Latterly the delirium became more noisy, particularly at night. He called out aloud, and remonstrated violently, when nourishment was offered to him. Still he could be roused, and all along he took his nourishment and medicine. The urine was drawn off twice a day with a catheter; he resisted this being done. The urine was at this time scanty, and had a bloody tinge.

It was only four days before death that he had threatening of diarrhœa, but it was never urgent. He had at most three or four small motions in 24 hours, and this only for a day or two. These were not yellow, or of a pea-soup colour, but dark, like bird-lime.

During his entire illness he was most faithfully and conscientiously nursed by Sergeant Taylor, of the Bengal Sappers and Miners. Night and day his every want was attended to.

His nourishment consisted of strong soups, jellies, tea, milk, barley water, toast water, arrowroot, &c. He took port wine and water, moselle and brandy, latterly, in large quantities.

At first, in the way of *medical treatment*, he took quinine; afterwards strychnine, mineral acids, muriate of morphia, chloric æther, camphor, &c. Turpentine stupes and warm fomentations were from time to time applied over the abdomen. When delirium threatened, a blister was applied to the nape of the neck.

His symptoms, in spite of careful nursing, went on from bad to worse. Noisy delirium lapsed into stupor. He died quietly on the 5th December, 1867, at 7-30 P. M.

POST-MORTEM EXAMINATION.

Body somewhat emaciated, but not greatly so. Pink discoloration of the whole back of the body. No bed sores.

[illegible] to skull. Pacchionian [illegible] No excess of intra-cranial fluid. Brain healthy and firm. Punctated vascularity of cortical substance on section. Grey matter normal.

Thorax.—No pleuritic inflammation. Lungs soft and crepitant, of comparatively pale colour towards the apices, dark and hypostatically congested on the posterior aspect, especially on right side. No consolidation. No tubercle. On section the cut surfaces [illegible]

[illegible] tongue.

Bladder contained about two ounces of urine, thick in con-

Liver [illegible] and slightly

Spleen [illegible] and slightly

Kidneys [illegible] It was

Bladder contained about two ounces of urine, thick in consistence, and [illegible]. No [illegible] of softening of [illegible]. No [illegible] appreciably [illegible] presenting a yellow apex, with a surrounding fringe of vascularity, or they were cup-shaped and puckered, with softened [illegible] they were [illegible] presenting a yellow apex, with a surrounding fringe of vascularity, or they were cup-shaped and puckered, with softened [illegible] they were [illegible] The [illegible] was dark, and resembled [illegible]. The [illegible] were chocolaty coloured, and purple on [illegible].

REMARKS.

There can be very little doubt but that this was a case of genu[illegible] with [illegible] of the cheek, the red, glazed tongue, the greatly-enlarged [illegible] noisy delirium; and couple all these with the very marked and characteristic lesion of the intestinal glands above described,—there is no room for doubt as to the disease which we had here to deal with.

It is to be observed that the invasion and development of the [illegible] with a [illegible] I would [illegible] Typhoid [illegible] were [illegible] ously blended.

Dr. [illegible] in [illegible] with [illegible]

"One of the most general facts observed in reference to enteric [illegible] French epidemics of enteric fever, call attention to the fact that [illegible] character was manifested under a great variety of circumstances [illegible]

[illegible] remittent fever, or during its further progress, intermittent, or at least remittent, phenomena, which rendered the employment of [illegible] Maillot) records cases to show that enteric fever may simulate at first intermittent fever, and reciprocally an intermittent fever [illegible] marsh intermittent fevers are endemic, and with individuals who have recently left their own country, that we see enteric fever assume, at its commencement, an intermittent type" (p. 250).

[illegible] malarious fever,' in which the symptoms of typhoid fever, diarrhœa, rose rash, &c., were associated with those of intermittent fever. The typhoid symptoms occasionally predominated, and *post-mortem* examination revealed lesions of Peyer's glands."

[illegible] by De Claubery and Trousseau, one which, by those who served with the army of the Potomac, would certainly have been returned as *typho-malarious*, and which Dr. Harley would pro-

It remains for future observers to determine, with greater exactness than has yet been arrived at, what is the precise pathological relation between purely paludal fevers and typhoid; to what degree they may be due to similar exciting causes; [illegible] each other; and, lastly to what degree the most severe remittent cases eventuate in those local morbid lesions of the intestinal glands which characterize Pythogenic fever.

All such cases as the above, as throwing light on this subject, ought to be published.

FRACTURE BY OINTMENT.

BY E. MELLY W. SWIZIE, F.R.C.S.I,

Assistant Surgeon, 6th Foot; Lecturing Asst. Surgeon, Kohat.

CURIOUS cases sometimes come across the Indian Medical Officer's path, and no wonder to many. The following may not be thought to classify, but to me it certainly is.

One morning, early in 1866, a three hundred boy, aged about four years, was brought to me by his mother for treatment. On examination, I found the right humerus to present a tendency to angulation, from about three inches below the head to within two inches of the condyles, tapering above and below. The tumour was perfectly [illegible], not painful, but, from its weight, it had slightly curved the spine to the right side, and as the child stood erect, a perceptible arch was evident. He always kept his left hand supporting the right arm; and it seems never to have struck his stupid relatives that a strong round bar-lock would have given him rest. The limb was greatly wasted; indeed the muscles of the arm, especially the [illegible] and the attenuation was so great that there appeared to be nothing [illegible] but the integument. The [illegible] was not [illegible], but the tendency of the case was very [illegible]. He had been running from something that frightened him, and fell [illegible] fracture through the whole extent of the middle third of the [illegible] to [illegible] and [illegible] Doubtless, the poor little fellow moved the unset fragments, [illegible] was [illegible] the progress of the cure: the consequence was that this enormous amount of callus was developed, glueing the pieces together. No trace of crepitus remained: it was from head to condyles one solid bone. Such was his state some eight [illegible]

I was [illegible] to [illegible]. Amputation was [illegible] I [illegible] I might remove [illegible] but I [illegible] [illegible] and [illegible] his health by good food, [illegible] by [illegible], so, putting his arm in a sling, I left [illegible]

[illegible] got into good health, and the [illegible] [illegible] [illegible]

For the sake of doing something, I ordered an ointment, containing 100 grains of iodide of potassium and 10 grains of iodine to an ounce of lard, to be rubbed into the tumour twice a day: he was also to take a grain of the iodide twice daily. I confess I did not expect much, but the result astonished me.

After treatment of this kind for about three weeks, he complained that the rubbing hurt him; and on examining the arm, I plainly detected *crepitus*, and found the tumour, like an iceberg in summer, rapidly breaking up in every direction. The tale is told. I persevered more carefully with unusual interest, and in the end re-absorbed almost all the callus, left the fragments moveable, and thus "*refracturred the bone by ointment.*" All medicine was then stopped, and the bone properly set in splints. He made a capital recovery, callus being again thrown out; and the fragments re-united in their proper places.

Have any of my brethren met a case in which the absorbent power of iodine has been so powerfully shown? I never had much faith in the disfiguration of a lady's neck by daubing iodine paint over it; nor can I say that many buboes, scrofulous glands, or enlarged livers have retreated before my brush; but for the future I will put more faith in the steady introduction of iodine into the system when I want absorption.

This treatment might be successful in partially removing one deformity, for which a surgeon is often unjustly blamed. It is one of the most difficult things I know of to keep a child quiet when the apparatus for a fractured clavicle has been applied. Consequently, an unsightly lump on the bone results, especially if the little patient be a girl, who must always have her biggest doll in bed with her. When the girl grows into the young lady, and wishes to wear low dresses in a ball room, the surgeon is blamed for the deformity which the childish restlessness caused. Without going to the length of refracturing, which would then be hardly possible—if advisable, the tumour might be sensibly reduced.

I am quite aware of the refracture of bones from blood diseases, but then we do not want it; when we do, it is more rare to be able to procure it.

November, 1867.

DISLOCATION BACKWARDS OF THE STERNAL END OF THE CLAVICLE.

BY ASST. SURGEON J. A. PURTEON COLLIS, M.D., L.R.C.S.I.,
Officiating Professor of Physiology in the Medical College of Bengal.

KHUDA-I-DOST KHAN, aged 40, a Ghilzai Pathán, of the Azárkhail tribe, was admitted into the 1st Surgeon's ward of the Medical College Hospital (of which I was temporarily in charge) on the night of the 13th-14th November, 1867. He is an itinerant "bazzáz" (cloth merchant), and has but recently come to Calcutta. On the night of the 13th he was getting out of the way of a buggy which was bearing down upon him, when another buggy, coming up behind him, struck him on the back of the left shoulder, and rolled him over. He became insensible, but thinks that the buggy wheel passed over the front of the left shoulder, and thence across the chest; but his only reason for this belief is the fact that his left clavicle and some of his right ribs have suffered. He was picked up by the Police and brought to the Medical College Hospital.

Present state, 14th November.—A rather haggard man, with grizzled hair, looking older than his reputed age, and even dirtier than his countrymen usually are, both which conditions depend, probably, on the fact that his wordly affairs have not prospered lately. He has a superficial lacerated wound, or rather a deep excoriation, on each knuckle of the right hand, and another over the right malar bone; all evidently caused by his contact with the ground, when thrown over by the buggy. The lower lip is also slightly lacerated by the teeth. He complains of pain along the angles of the ribs below the right scapula; and on examination, fracture of the 5th and 6th right ribs, midway between their angles and their junction with the cartilages, is detected. There is no emphysema, and not the slightest bruise or excoriation on the front or sides of the chest, or of either shoulder; showing that the buggy could not have passed, as he supposes it to have done, across his thorax. On the upper and back part of the left shoulder, between the outer end of the clavicle and the root of the acromion, is a bruise about as large as the end of a buggy shaft, with some ruffling of the cuticle. There are several trifling bruises and excoriations on the back of the chest.

The patient complains chiefly of intense pain at the inner end of the left clavicle, and declares that the bone has been broken. No crepitus can be detected on passing the hand along the clavicle from without inwards: but on reaching the sternal origin of the sterno-mastoid, the clavicle can no longer be felt; and instead of its convex head, the finger encounters, on the upper angle of the sternum, a shallow cup-like cavity, which looks towards the left side, and slightly forwards and upwards. The right sterno-clavicular articulation is in a normal state, and presents a complete contrast to the left, showing a convex protuberance looking towards the mesial line, instead of a concavity looking away from it. There is no appreciable difference in the radial pulses, no numbness or coldness on the left hand, and no difficulty of respiration; indeed, considering that two of his ribs are broken, the patient is wonderfully free from distress. The distance from the acromion to the median line appears to be the same on both sides, but was not measured. There is great tenderness about the left sterno-clavicular joint, and the pain in it is so great as to engross the patient's attention; he barely alludes to that caused by the broken ribs. There is no especial tension of the left sterno-mastoid, and the end of the clavicle cannot be felt behind or through it.

The *reduction* of the dislocation was easily effected, without the aid of chloroform. The patient sitting up, I stood behind him, with my left foot on the bed, and fixed his thorax by placing my knee between his scapulæ; while with my left hand I grasped the dislocated clavicle, as near its sternal end as possible. Dr. Ewart, holding the patient's left wrist, extended the arm steadily backwards, outwards, and slightly downwards, until the dislocated bone was felt to move, when he lowered the arm sharply to the side, while I, at the same time, raised and pushed forward the clavicle, the sternal end of which slipped into its place with a sensible, and almost audible, "click." The reduction caused but little pain, and no difficulty was experienced from the resistance of any of the muscles. On letting go the arm, the clavicle showed no tendency to slip out of its proper place. A broad bandage was placed round the chest, and the left arm secured to the side by a second narrower one; and the patient was confined to the recumbent posture. The intense pain in the dislocated joint was at once relieved by the reduction; indeed, the patient cannot understand why his broken ribs and cut hand are not treated by us in the same off-hand and satisfactory manner.

The case has gone on well since, and the patient now (25th November) only complains of pain in the broken ribs. There is slight swelling, and a good deal of tenderness, over the dislocated joint, but no pain in it; and the clavicle has not shown any tendency to slip out of its proper place. He is discharged to-day, at his own request.

REMARKS.

Though not so rare as it was believed to be by Sir A. Cooper, this dislocation is still an uncommon one. As regards the absence of all difficulty of breathing or swallowing in the present case, this can easily be accounted for by the direction in which the force producing the dislocation acted. The man had evidently been struck by the buggy shaft on the left shoulder, and thrown over on his right side, thereby injuring his right hand, and breaking his right ribs. The force acted upon the clavicle by driving its outer end directly forwards, and also, probably, slightly upwards, and thereby forcing the sternal end of the bone backwards and slightly downwards, but not in the least inwards. I believe that the sternal end of the clavicle lay, in this case, directly behind and below the articulatory surface upon the sternum. Had the dislocation been caused by a force driving the shoulder inwards, instead of simply forwards, dyspnœa and dysphagia would doubtless have resulted.

LARGE FIBROUS TUMOUR OF ARM WITH DEPOSIT OF CANCER CELLS; AMPUTATION AT THE SHOULDER JOINT; RECOVERY.

BY KASSY KISORE MITTER,
Sub-Assistant Surgeon.

INAYAT ULLAH, a Mahomedan boy, aged 12 years, a native of Jessore, was admitted in the Dr. Partridge's wards, into Mr.

tumour increases.

[illegible] on the tumour,—one at the upper and outer aspect, and the other [illegible] hand, but some shooting pain is almost always felt in the tumour.

The circumference of the tumour, measured obliquely around [illegible] ference around the upper prominence 18 inches.

Its length, from the tip of the acromion process to the lower edge of the tumour, was ten and a half inches, and along the inner aspect, from the anterior fold of the axilla to the lower edge of the tumour, ten inches.

[illegible] during which period he became more and more emaciated; the tumour grew decidedly larger, and pain became more troublesome, [illegible] of saving his life. The operation was accordingly performed on the morning of 23rd September, 1867. About six or eight ounces of blood were lost. The glenoid cavity, coracoid process, &c., were healthy. Pulse became very low. After the opera- [illegible] He [illegible] in the stump.

[illegible] ; brandy.

[illegible] ; temperature 101 ; no bleeding. He took milk and soojee well.

[illegible] ; brandy.

Stump dressed with carbolic acid, mixed with linseed oil (as [illegible] ; temperature 102 ; slight suppuration.

[illegible]

continued. Half diet, bread 8 oz., kid curry, milk, and soojee, [illegible]

[illegible]

Aquæ camph. ... ... ʒss. H.S.

[illegible] to heal up rapidly. By the middle of November, 1867, stump [illegible]

The patient was discharged on the 2nd December, 1867, in [illegible] the catalogue:—

"No. [illegible] the shoulder-joint for a tumour round the head of the humerus, but unconnected with the bone. The tumour appeared fifteen [illegible] feet high. Cautery was, as usual, applied, and the cicatrix thus produced, enormously distended by the rapid growth of the tumour, and presenting a radiating appearance, is seen on the posterior aspect of the tumour. The tumour increased very rapidly, and being bound down by the tense skin, fascia, and muscles, was quite immoveable, and had the appearance of springing from the bone. The patient's health was being worn down by irritation, and accordingly amputation at the shoulder- [illegible] irregular ovoid, about eight or nine inches in its longest, and seven in its shortest, diameters. Now that it is no longer bound down by the integuments, it is quite moveable, and free from the humerus, which lies in a groove in it, but is not in the least adherent to it. The tumour lies on the inner side of the bone, but extends round the anterior and posterior aspects of the limb. The musculo-spiral nerve lies between it and the bone, and the compression to which it was thus subjected accounts for the severe pain in the limb from which the patient suffered. The subcutaneous areolar tissue and fat are œdematous; to this dropsical effusion into the tense parts, the peculiar elastic feeling which distinguished the tumour before removal was probably in part due. Posteriorly and externally, the tumour is embraced by the tensely stretched latissimus dorsi, which must have been [illegible] the muscle has been divided during the operation, but a small band of it still remains entire, embracing the tumour. Anteri- [illegible] pectoralis major, a portion of which, undivided, still surrounds its lower portion.

"The axillary vessels lie internal and anterior to the tumour. [illegible] well nourished as its fellow.

[illegible] The tumour is of a [illegible], white, and in [illegible] tendency to break down into cavities, or undergo softening. Its cut surface is somewhat lobulated. Under the microscope, it shows a small quantity of fibrous stroma, and a great number of nucleated cells, mostly caudate or pear-shaped."

REMARKS.

The case is remarkable as showing how a tumour, quite unconnected with a bone, may, when tightly bound down, completely simulate malignant disease of the bone. In this instance the disease must have commenced in the axilla, probably in one [illegible] of the soft parts, fixed it so firmly against the humerus, that not the slightest degree of motion could be perceived between the two structures; and no one examining the patient before the operation would have hesitated to pronounce the case one of malignant disease of the head of that bone.

Publications Received.

[illegible]

[illegible] W. H. EVANS, [illegible] W. J. [illegible] H. H. RICHARDSON [illegible]

Notices to Correspondents.

[illegible]

The Indian Medical Gazette.

All communications, and books for review, to be addressed to the "Indian Medical Gazette," Calcutta, and may be posted free, and may be sent by ONE SIDE of the Indian Post.

The Editor cannot undertake to return rejected communications, even when accompanied by the necessary postage.

No notice will be taken of anonymous communications.

Communications should be written as much as possible on one side of the paper only, and as legibly as possible.

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OURSELVES.

IN commencing the third year's issue of the *Indian Medical Gazette*, we cannot refrain from congratulating our readers and ourselves on the success which has hitherto attended our efforts. Although there are few, if any, countries in the world where more materials for a journal like this exist, yet it is a melancholy fact that Indian Medical Periodicals are seldom long-lived, and, however well supported at first, are apt to perish, from want of contributors rather than of subscribers, after a few years. As yet, we are glad to say, such has not been the case with this paper; indeed, we have been obliged to exclude many valuable contributions, and to retain others an unreasonable time before publishing them, owing to our not having sufficient space at our disposal. We only hope that the members of our profession throughout India will be as ready to give us the results of their experience this year as they have hitherto been. That so many cases and original communications have appeared in our columns is the best possible proof that a medical periodical, appearing at comparatively short intervals, in which isolated cases and detached observations can be preserved, is a desideratum in this country, the want of which is imperfectly supplied by comparatively large volumes appearing at longer intervals. No one can think more highly of such publications as the *Indian Annals*, or the *Madras Quarterly Journal of Medical Science*, than we do; yet we think that a periodical like this is not, in its own comparatively humble sphere, less useful than they are. We trust that our readers will continue to be of the same opinion.

THE PROPOSED ALTERATIONS IN THE MEDICAL COLLEGE HOSPITAL.

THE [illegible] we must call the [illegible] Medical College Hospital at Calcutta, are unfortunately too familiar to our readers, and to the Medical Profession at large. Attention has so often been called to them in our pages that we feel an apology due to our readers for again broaching so trite, and we fear we must add, so *hopeless*, a subject. We have now before us the Report of the Committee which met in January and February to report upon, and to suggest remedies for, the defects of the building. In the beginning of the present year we congratulated the profession on the appointment of this Committee, from which we hoped for some speedy result. Ten months have passed since their report was sent in, and as yet nothing has been done; and, considering the nature of the alterations which they have recommended to be made in the hospital itself, we cannot say that we regret the delay. Had measures only been taken during the past summer to clear the ground to the south of the hospital, and to improve the drainage of Colootollah Street to the north, the past year would have been a profitably spent one, as far as the hospital is concerned, in spite of the building itself having been allowed to remain "with all its imperfections on its head."

For the benefit of such of our readers as have not seen the Report of the Committee, but are acquainted with the locality, and take an interest in the institution in which many of them were educated, or have held office, we give a brief outline of the alterations recommended:—

1. The hospital compound to be extended southwards to Nimoo Khansamah Lane, as far as the first turn to the south made by that lane, and thence directly westward to meet a line drawn southward from the angle of Medical College Street.

This would add a considerable piece of ground to the south, not only of the hospital, but of the museum and dissecting room. On this ground it is proposed to erect an ophthalmic, a midwifery, and a cholera hospital. The three buildings to be separate, and built in echellon, facing southwards, but so placed as not to obstruct the ventilation of the hospital.

2. The addition at the east and west ends of the hospital, and in line with the northern face of each of the present wings, of a smaller wing (or rather tower, for it is proposed, according to the plan, to extend but a very little way to the south), with the same number of stories as the present building. In these additional wings the privies and lavatories are to be placed.

3. The addition, on the north face of the present entrance porch, of an operating theatre, the floor of which is to be on a level with that of the (native) wards on the first floor. The room under this theatre to be used for the reception of out-patients.

4. The "Council Room Ward" to revert to its original purpose as a place of meeting for the hospital staff. The present operating theatre and accident ward to be assigned to the nurses, whose quarters (or rather dens), and the staircase adjoining, should be cleared away, so as to leave a fourth ward in the western wing, like that in the eastern. The cholera ward to be used as the dispensary, for which it and the accident ward were originally intended.

5. The arches between the two middle wards (medical and Surgical) in each wing to be built up, except one in the north end, in order to secure some amount of segregation of the sick.

The estimated cost of the above alterations, and of some minor ones (such as the erection of an enclosing wall and porter's [illegible]

upper wards, as far out as the inner faces of the pillars,) is [illegible] much of late years that no fair comparison between the two [illegible]

As to the extension southward and westward of the hospital compound, there can be no two opinions. In this respect, as in many others, the original design of the hospital has never yet [illegible] have been formed and laid out as the hospital garden. That this was not done in the first instance is the more to be regretted, [illegible] original magnificent plan being now, we fear, out of the question, [illegible] allow space for special wards (for midwifery, cholera, and [illegible] to the detriment of both their occupants and the other patients. [illegible] remedied by carrying on the line of both these streets, the former southward, and the latter westward, until they meet at what will then be the south-west corner of the college compound; so that the latter may be bounded by a road, instead of by houses. [illegible] worst ventilated quarters of Calcutta would be opened out, and [illegible]

We hope that, when the site of the hospital is being improved, [illegible] existing drains, or in the fact that it is the lowest spot in the [illegible] the east end of Colootollah Street, and the neighbouring lanes, [illegible] surrounding streets flows, producing a lake often two feet or more in depth. Muchooa Bazar, further north, claims, we believe, the doubtful honor of being rather worse in this respect.

With regard to the proposed additions to the hospital itself, we cannot agree with the Committee that they will either [illegible] constructed so as not to interfere with the appearance" of the building. The latter is, of course, a point of relatively little consequence; and the greatest admirer of the hospital would doubtless see its symmetry destroyed, were its efficiency thereby [illegible]. [illegible], have their value; and as a mere piece of architecture, the Medical [illegible] its present [illegible] its fair proportions marred by patchwork additions, just sufficient to spoil its outline, but on too small a scale to remedy its [illegible] mendations of the Committee carried out, there can be little doubt, supposing that the plan appended to their Report correctly expresses their views, as we presume it does. The proposed additions to the east and west wings are on far too small a scale to provide latrine and lavatory accommodation for more than [illegible] they shall suffice for four wards. As to appearance, they will, in comparison with the building to which they are to be attached, look as insignificant as do the staircase towers devoted to the use of blisties and mehters, which flank the better class of private houses. It may certainly be said that, half a loaf being better than no bread, four wards, with latrine accommodation for two, are better than the present arrangement of four wards without any latrines at all. But reforms, to be lasting, should be sufficient; and if it is intended to improve the hospital to any practical extent, sufficient latrine and lavatory accommodation for all the wards must be provided. A much better plan than that recommended by the Committee, and one which, so far from disfiguring the building, would, if anything, improve its appearance, would be to prolong the existing wings 30 or 35 feet further east and west respectively, retaining their full width from north to south. Space for these extensions exists already, the only building which stands in the way being the house on the west of the hospital, which is so low that it would not seriously affect the ventilation of the new western [illegible] north-east angle.

[illegible] will remain the serious and irremediable defect that the latrines of all the four wards on each floor will be collected into one block, instead of each ward having its own placed close to it. This, however, is one of the radical faults of the original design and cannot be obviated by any subsequent alterations.

It may be objected that the proposed new wings would interfere with the ventilation of the wards by closing the present east and west verandahs. The verandahs in question, however, do not extend along the whole width of the building, as the angles of the latter, to a considerable distance back from each face, are occupied by staircases and closets. Moreover, only two wards out of eight in each floor would be affected by the change, and the loss in ventilation would be more than compensated for by the substitution of proper latrines, bath-rooms, and lavatories for the present very objectionable and *kutcha* arrangements.

The operating theatre, unfortunately, can hardly be placed in any position where it will be sufficiently isolated, without being more or less unsightly. But this will be of the less consequence, as it is proposed to place it on the north side of the hospital, so that the appearance of the south, or principal, facade will not be interfered with.

Only second in importance to the improvements in the hospital itself is the erection of proper quarters for the four Sub-Assistant Surgeons attached to the Surgeons' and Physicians' Wards. The duties which devolve upon these officers are quite

onerous enough, without the additional fatigue of a long journey to and from hospital. The accommodation provided should be on a sufficiently liberal scale to enable the Sub-Assistant Surgeons to make the hospital their *home*, as well as their place of business. Until this is done, we cannot expect these officers to feel thoroughly contented with their very responsible and honorable position.

Better quarters for the House Surgeon, Apothecaries, and Purveyor, as well as a proper dead-house, and cook-houses, &c., are also wanted, but less urgently so than quarters for the Sub-Assistant Surgeon.

In taking leave of this subject, we must say a word in defence of the designers of the Medical College Hospital. It is unjust to make them responsible for all its defects. At the time when its erection was commenced (1848), our ideas of hospital architecture were very different from those which now prevail; but even had the case been otherwise, it must be remembered that both the funds and the space available were greatly limited in extent. To this cause, no doubt, we owe the objectionable manner in which the wards have been placed with their ends, instead of their sides, to the prevailing wind, and many other faults in the building. Moreover, we should not judge of the intended hospital by the existing one, which is really only a fragment of the original design. The latter included a spacious garden in front, and a range of out-buildings, cook-houses, &c.; but these important portions of the design have never been carried out. There certainly are omissions in the original design which cannot be defended on the plea of limited funds. Too much attention was paid to the outside of the building at the expense of the interior, and huge pillars, after those of the Temple of the Winds at Athens, with pediments and cornices to match, were lavished on the outside of the hospital, while it was considered unnecessary to provide such a trifling matter as a water-closet for any one of the 14 wards within!

THE NEW SANITARY INSPECTORS-GENERAL.

IT is now definitely settled that India is to have a staff of Sanitary Inspectors-General worthy of the country in which they will labour, and of the science which they represent. The huge area, which is vaguely spoken of as the "Bengal Presidency," but which, practically, includes also the Central Provinces and British Burmah, is no longer to be left to the supervision of a single Sanitary Commissioner. Lower Bengal, the North-West Provinces, the Punjab, and the Central Provinces (including Berar) are each to have an Inspector-General on a monthly salary of Rupees 1,500. Sanitary Inspectors-General for Oudh, Assam, and British Burmah are also to be appointed, but are to receive only Rupees 1,200 a month. Under this arrangement, it will really be possible to carry out hygienic reforms elsewhere than in barracks and cantonments. Hitherto this has not been the case. The extent of country over which the one Sanitary Commissioner for Bengal has till now been supposed to exercise supervision is so enormous, that the most which he and his Secretary could do has been to see that the troops were not exposed to any remediable cause of disease, and that, where cantonments adjoined large cities, no *very* flagrant breach of the laws of Hygiene should be permitted in the latter. But no effectual efforts could be made to better the sanitary condition of the country at large, or of those towns which do not adjoin military cantonments. In the latter case, the carrying out of sanitary reforms has hitherto been generally left to the municipalities,—bodies which, whether in England or in India, are notoriously more anxious to keep down expenditure than to remove nuisances, or to take measures calculated to diminish mortality. But people are now becoming alive to the fact that "the liberty of the subject" in such matters, which it has hitherto been the tendency of all legislation on this point to guard so jealously, generally means liberty to injure the health of the entire community in order to save the money of a few. This is the case in England, where all men having the least pretensions to education acknowledge, at any rate, that pure air and water, and clean soil, are desirable, even though they may grudge the requisite funds to pay for them. Still more is it the case in India, where the wealthy mercantile classes, which form so important an element in our municipalities, are generally utterly ignorant and careless of such matters. The classes here mentioned—the rich "Lalls," "Seths," and "Malls" of smaller towns—are generally conservative in their ideas, and, though often lavish of their money in such useful works as the construction of tanks, serais, and bazars (*apne nám ke wáste*), are peculiarly averse to the removal of time-honoured abuses, and especially to paying for such removal. In the case of towns without municipalities, and of villages, the carrying out of sanitary measures has hitherto devolved upon the Magistrate, an officer already over-burdened with work, and whose duties are increasing in number every day. The Civil Surgeon, also, who is supposed to be Ex-officio Health Officer of the District, has seldom sufficient leisure to explore it in that capacity; the fact that, in most cases, he is in sole charge of the jail, obliging him to spend all his time at the Suddur Station, except on the rare occasions when he is able to leave it for a few days, in order to inspect outlying "branch" dispensaries. Hence, from want of the proper machinery, there has really been no *permanent* sanitary supervision of the civil population of the country. When a great epidemic has carried off half the inhabitants of a district, a Special Commission is appointed to report upon the same, and to suggest means for preventing the recurrence of a similar calamity. The recommendations of such a Committee, as regards drainage, removal of decaying vegetable matter from tanks, clearing away jungle, &c., are (or are not?) carried out in the first instance; and for the time the disease is removed. But it being nobody's especial duty (or at least not the duty of any one with sufficient leisure) to see that the improvements so carried out are kept up, things soon relapse into their former condition; disease re-appears; and wiseacres shake their heads at what they are pleased to consider the uncertainty of hygienic measures, and the inefficiency of Medical Officers; or perhaps hint darkly that the original Commission, and any subsequent one which a return of the disease may have called for, are jobs to put money into the doctor's pocket! Unfortunately, we need not look far for an example of this state of things. It appears that the epidemic in the Hooghly and Burdwan districts, which was so much reduced in its severity by the measures recommended by the Committee appointed to report upon it in 1862, is now again raging violently, owing, doubtless, to the improvements then carried out not having been since maintained. Under the new system each local Government will have on its staff a Medical Officer whose

the appointments. Before many weeks, another hot season will [illegible] with the usual train of epidemic diseases. We can [illegible] that we have not seen the last of the [illegible] without an outbreak of cholera in some part or other. It is therefore of great importance that the officers who are to hold [illegible] may have time to make themselves familiar with their duties [illegible].

We [illegible] our opinion on the subject of the appointment of layman to what was then the Presidentship of the Sanitary Commission, but has since become the sole Sanitary Commissionership. Ably as the gentleman then appointed has discharged his duties, we still consider that the post should have been filled by a Medical officer. The new arrangements, however, will, to a certain extent, remove the objections to the anomaly of placing a combatant officer in an essentially medical appointment. With a [illegible] of the Sanitary Commissioner will be considerably modified, and will become less medical, and more those of a Secretary to Government, at the head of a Department composed of officers specially qualified by their profession for the duties assigned to them.

Official Documents.

[illegible] Medical Officers to [illegible] with the Military Department, [illegible] the two Inspectors-General of Hospitals, the Inspector-General of Ordnance Medical Establishments, and the Principal Medical Officer of the Queen's Troops in India.

[illegible] from Her Majesty's Secretary of State, [illegible] Governments noted on the margin, with a request that they will [illegible] and that copies be also forwarded to the Chief Commissioners of Oude, the Central Provinces, and British Burmah, with a request that they will recommend a medical officer to the Governor-General in Council for appointment as Sanitary Inspector-General, respectively, in Oude, the Central Provinces [illegible].

Ordered, that copies of the same documents be communicated to the Inspector-General of Hospitals, Indian Medical Service, Lower Provinces, to the Sanitary Commissioner for Bengal, and to the Director of Ordnance Medical Establishments.

Ordered, that a copy of this Resolution be sent to the Military Department, with reference to the correspondence with that Department above cited.

Meetings of the Bengal Branch of the British Medical Association.

[illegible] month falling within the Doorga Pooja holidays.

The [illegible] meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College, at 8-30 P. M., on Tuesday, 12th November, 1867. Dr. S. G. Chuckerbutty, President, in the Chair.

Dr. [illegible] rather due to rest and proper food. Dr. Ewart had considered [illegible] of being filled with fluid; and in one place it began to soften [illegible] recurrent laryngeal nerve were compressed between the aneurism and the descending aorta, and the left lung solidified. The [illegible] and was full of fibrinous clots, of which the outer portion was laminated, but the central mass was undergoing fatty degeneration. The extra-thoracic sac (which communicated with the intra-thoracic [illegible] the sternum, which had been divided into two portions by the pressure of the aneurism, and laterally by the ends of the ribs) was filled with a soft red coagulum, containing lacunæ filled [illegible].

Dr. [illegible] if not *post-mortem*, formation; and he considered that the large quantity of iodide of potassium which had been given had [illegible].

Dr. Ewart also exhibited some livers in which abscesses were undergoing natural cure; in one the pus had become converted into a creamy puttaceous mass prior to being absorbed; in others the cavity of the abscess had been almost obliterated. Dr. Ewart believed that many of the star-shaped cicatrices in the liver, which are now considered to be caused by syphilitic deposit, were the result of this spontaneous cure to [illegible].

"syphilitic gummatous tumour" found in the right optic thalamus of a patient who suffered from hemiplegia of the left side.

Dr. Colles, referring to the case of thoracic aneurism, doubted that the iodide of potassium had any effect in promoting the fatty degeneration of the clot, which would, he thought, have occurred, in any case, in the central portions of so large a mass. Recent researches had raised considerable doubts as to the received idea that the fibrin deposited from the blood, in these or any other cases, became organised, and rather led us to believe that the fibrin so deposited underwent degeneration and removal, before new tissue was formed. Dr. Colles also doubted that the clot in the external sac was of *post-mortem* formation, though evidently of recent origin.

The President here regretted that, as Dr. Ewart had just been obliged to leave, the meeting could not have the benefit of any further remarks from him on this particular case.

Dr. Charles considered the softening of the central part of so large a clot to be a perfectly natural process, quite independent of the influence of any drug.

With regard to the complete absorption of hepatic abscess, Dr. Charles was rather sceptical. Several years ago he had opportunities of examining the bodies of many soldiers who had suffered from hepatic abscess, and in some of them he had found an attempt at spontaneous absorption. In many cases the abscesses appeared to be in a dormant state, and Nature had taken steps towards effecting a cure, a thickened caseous condition of the pus, and some puckering of the sac of the abscess, being observable; but in no case that he had examined was more than the *attempt* at recovery in this way evident, the patient always dying before Nature had completed the work. The fact was the more striking when viewed in relation to the frequent cicatrices in the lungs, which were often very perfect, Nature succeeding in completely closing the cavities. As regards the star-shaped cicatrices found on the surface of the liver, it was not easy to decide, in all cases, whether they depended on syphilitic deposits or on abscesses. Syphilitic deposits were usually confined to the surface of the gland, whereas abscesses were not so. Hence when cicatrices were found in the substance, as well as on the surface, of the liver, we might safely attribute them to abscesses. Dr. Charles had seen three cases in which hepatic abscess had certainly existed, and in which it was supposed that it had been absorbed; but in such cases the abscess may have been small, and have burst into the intestines very high up, so that the pus, before being evacuated externally, had become so much altered as to prevent its recognition. In cases like that brought forward to-night by Dr. Ewart, and another laid before the Association three or four years ago, in which there were seven abscesses, the abscess was never found completely healed. If in these cases Nature attempted a cure in this way, she seemed unable to carry it out effectually.

Dr. Chuckerbutty, in reference to Dr. Ewart's case of aortic aneurism, said that it proved nothing against the use of iodide of potassium, but that the subject of the action of that salt in promoting or retarding the coagulation of the blood was still *sub judice*. Nelaton, Chomel, and other authorities had, at the same time with himself, found it do good in cases of aneurism. He thought it probable that, in Dr. Ewart's case, softening of the clot had begun before admission. Dr. Chuckerbutty doubted the frequency of absorption in cases of hepatic abscesses; he had never met with such cases, though he had found abscesses with thicked walls and creamy pus in the substance of the liver, as well as masses of areolar tissue, which perhaps marked the site of absorbed abscesses.

Dr. Chuckerbutty then showed a specimen of numerous minute deposits, apparently tuberculous, in the liver and kidney; the lungs in this case were infiltrated with grey tubercle.

The meeting adjourned at 10 P.M., with a vote of thanks to the Chair.

Reviews.

Nature, Treatment, and Prevention of Cholera. By EDWARD AMBROSE FITZGERALD, M.R.C.S.; Eng., Assistant Surgeon, 2nd Sekh Infantry.

MR. FITZGERALD, in this pamphlet, gives an account of his experience in the treatment of cholera at Dera Ghazi Khan, in June last. The total number of cases treated by him was only twelve, of which three, who were almost moribund when admitted, died. Of the remainder, all of whom recovered, five were "of a more or less suspicious nature," and only four were undoubted cases of cholera. Mr. FitzGerald's statistics, therefore, are on too small a scale to be of any great value, though encouraging so far as they go. He is an advocate of Dr. George Johnson's theories, but not of his practice, considering that Nature herself "eliminates" the poison efficiently; and that our object should be to check its multiplication in the system, which he proposes to do with quinine, giving the latter every hour or half hour in five-grain doses in effervescing draughts. He also gives acids (especially lime-juice), on the principle that they "possibly cause the generation of electricity in the animal frame, just as an acid would in the cell of a galvanic battery," and thus remedy the "loss of that electrical balance which appertains to all healthy individuals." When there is rapid breathing, a sense of suffocation, and cessation of the discharges, he recommends venæsection.

The results which have followed this mode of treatment are encouraging so far as they go; but we think that the author would have done well to give his plan a more extended trial before "rushing into print," the more so as we cannot see much originality in his mode of dealing with cholera. Quinine, acids, and the lancet have all been tried ere now, though not possibly in exactly the way in which Mr. FitzGerald recommends. The close similarity between cholera and the cold stage of intermittent fever is so familiar to all Medical Officers on the frontier, that we are rather surprised at the author, writing from Deraját, going as far as Hedgehog for instances of it. A treatment which, used in four cases of genuine cholera (for we leave out the three fatal cases as having been moribund when admitted), is successful in all, is certainly worthy of further trial; but it must be remembered that as great success in the first instance has attended other systems of treatment, which, on further trial, have proved valueless, the "suspicious cases" should not be counted. "Choleraic diarrhœa," if only carefully watched, is not, as a rule, a difficult disease to manage. Mr. FitzGerald deserves credit for so honestly recording that more than half his cases were only "suspicious" ones; too many advocates of new modes of treatment, either carried away by enthusiasm, or from more dishonest motives, call every case of severe diarrhœa successfully treated by their plan, "incipient," or even "genuine," cholera. We hope that Mr. FitzGerald will give us the benefit of his experience in the treatment of cholera hereafter, when he has further tested the plan which he now advocates.

On the Laws of Health, considered with reference to the habits and peculiarities of the Natives of India. By BABOO KANHAY LALL DEY. Read before the Bengal Social Science Association on the 26th July, 1867.

LIKE the former pamphlet by the same author, (*Hindoo Social Laws and Habits viewed in relation to Health*, reviewed at page 349 of our first volume) this is mainly a protest, by an educated and enlightened Hindoo, against the habitual indifference to the laws of Hygiene shown by the better classes of his countrymen. In every country such laws are more or less ignored, too often almost necessarily, by the lower orders; but while in Europe the upper classes have long been aware of the importance of cleanliness and ventilation, the conservative tendencies of even highly educated Asiatics have hardly been at all affected on these points. The wealthy zemindar, while from his position free from the necessity of taking exercise in order to earn his bread, has not yet learnt to take it to preserve his health; and he still sleeps, from choice, in an ill-ventilated closet, which would not be considered good enough for a "condemned cell" in any modern jail. Against such time-honoured abuses Baboo Kanhay Lall Dey seems determined to carry on a crusade; and he deserves the more credit for doing so from his not being a slavish imitator of European fashions. In his former pamphlet he deprecated the substitution of our ungraceful and inconvenient dress for the modification (partly Muhammadan and partly Hindoo) of Indian costume now worn by Bengalee gentlemen; and in the present he maintains opinions upon the subject of food, which would find small favour with the European soldier, such as that a diet composed exclusively of rice and dall will enable an able-bodied person to undergo any amount of labour without injury to health.

Having been designed for a non-professional audience, the present pamphlet does not go as deeply into the subject as did the former one, which was read before the Bengal Medical Association, but it is not the less valuable on that account. We only hope that those to whom it was addressed will carry into practice the excellent lesson which it is intended to convey to them.

Local Correspondence.

THE NEW SCALE OF PAY FOR UNCOVENANTED MEDICAL OFFICERS IN CIVIL MEDICAL CHARGE.

[redacted]

in Circular No. 58-4045, dated the 29th August last, from the Home Secretary to the Government of India to the Secretaries [redacted] the date of their permanent appointment to a civil medical [redacted] the service, can [redacted]

[redacted] as just or ex- [redacted] Medical [redacted] who, in [redacted] have been [redacted] instead of [redacted] And it ought to have occurred to the authorities that this new scale of pay, as modified by the Circular in question, is practically unattainable by these [redacted] [redacted] [redacted]

Germinal matter and the contact theory. By JAMES MORRIS M.D., 2nd Edition. London: Churchill. 1867.

Dr. Morris may be best described as an enthusiastic disciple of Dr. Lionel Beale. The King's College Professor may be regarded as the originator of the theory of "Germinal and formed matter," and Dr. Morris is his prophet. In this little work Dr. Morris sets before the reader the various facts in the history of zymotic diseases, which seem to point to the exclamation of contagious diseases, as lying in the theory that the poisons which float through the atmosphere are capable of reproduction when supplied with the necessary pabulum. Just as Dr. Beale would explain the development of a piece of connective tissue, Dr. Morris accounts for the spread of zymotic epidemics. Dr. Beale says that the minute nucleus accretes to it matter, and thus increases in bulk, and eventually divides, and thus the tissue is developed. So likewise, says Dr. Morris, is it the case with the poison of a spreading disease: a particle, which enters from some source of contagion, reaches the blood; it is, in fact, a piece of germinal matter, and it grows and divides, and thus increases itself. As regards the general principle on which the theory is based, the principle of the reproductiveness of some condition of matter—none can be the slightest doubt; but it has been dimly instructed long before Dr. Morris came upon the field. For the rest, we confess that we have failed to realise the proofs which Dr. Morris urges in favor of the process by which this reproduction is effected. Dr. Beale's theory involves the delicate supposition that some of the tissues of the body, which exhibit the highest vital powers, are to-day more or less than dead matter, or, as Dr. Beale terms it, "formed material." Dr. Morris has given us what a well-written and aptly-pointed discourse on the reproduction of the poisons of the spreading diseases. In doing this, he has achieved a great service, for there can be no doubt that the conservatives, if extensively read, will deserve to be what, however, must serve to awaken people's minds to the activity of the zymotic poisons, and to the necessity which exists in a community for the energetic measures for their destruction. In this way Dr. Morris paves the road to a perfect and universally appreciated system of hygiene; and for this he merits the praise of the profession. Beyond this we cannot say anything in favor of the verdict he asks us to bring in. As in the case of Scotch jurisprudence, the simplest verdict to record is that of "not proven."

Egypt and the Nile considered as a winter resort for pulmonary and other invalids. By JOHN PATTERSON, M.D. London: Churchill. 1867.

We are so inundated with treatises on "Change of Climate," and the works from time to time issued have so much to say, and so little to say, that we are inclined to look on all specimens of this class of literature with considerable suspicion. Dr. Patterson's little volume is in some respects, though not in many, an exception to the general rule. It is not diffuse; and it deals with its subject in an earnest, simple, straightforward manner. Books of this kind are necessarily dogmatic; and so we find that Dr. Patterson seldom gives a very satisfactory explanation of his reasons for stating that particular parts of Egypt have especial virtues in the influence of their climates over disease. It must, however, in justice, be said that it is by no means easy always to explain why particular climates have particular effects. Medical art, even in this century of advance, is still somewhat empiric. Dr. Morris advises invalids against uniting in parties to go up the Nile, and he seriously urges his patients to curtail the usual list of medicines, and especially the purgatives, cod-liver oil, and quinine. The Appendix contains numerous meteorological tables which are useful for reference.

On Ringworm: an inquiry into the pathology, causes, and treatment of [illegible] diseases to which this term has been applied. By [illegible], M.B. London: Hardwicke. 1867.

The subject of "Ringworm," as currently accepted, has been ever [illegible] and Mr. Smith has done well to go into the subject, and give some categorical arrangement of this class of diseases. Ringworm, which has been loosely [illegible] as the [illegible] eruption caused by [illegible], has been variously described as twelve distinct [illegible] of these twelve affections, there are but two which [illegible] the presence of a fungus, or vegetable parasite. [illegible] therefore gives a brief account of these twelve varieties of ringworm under the following heads:—Scabies, Tinea tonsurans, Tinea decalvans, Tinea favosa, Herpes circinnatus, Herpes iris, Roseola annulata, Erythema circinnatum, Lichen circumscriptus, Eczema, Psoriasis circinnata. There is nothing [illegible] any of the chapters devoted to these affections, but the descriptive details are accompanied by cases and thus the book will be found useful for reference by the busy practitioner.

A Treatise on Human Physiology. By JOHN C. DALTON, M.D., 4th Edition. Philadelphia: Lea. 1867.

In this edition of Dr. Dalton's highly popular and lucid treatise on general physiology, the author has been certainly remiss in his efforts to bring the book up to time. This is, in our opinion, greatly to be regretted; for, in its earlier issues, we know of no treatise which could be compared with Dr. Dalton's book either for clearness or comprehensiveness. In the volume before us, it must be admitted that little has been done to make the work *en accord* with recent research. The chapter on Blood is particularly open to this charge of negligence; in it we find no mention of Hoppe-Seylers, or the other German investigation. The development of the blood corpuscle is most inaccurately given, and we find no allusion, even of the faintest kind, to Mr. Sorby's and Dr. Stokes' wonderful discovery of the absorption-bands of hæmatin. Again, under the head of Circulation, M. Marey's first tracings with the sphygmograph are figured, but no account is given of the wonderful application of the instrument as a means of physiological research. We have selected these traits at random, but we believe readers will find that the same carelessness is displayed in the other chapters of the volume.

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, November 18th, 1867.

THE most generally discussed question in professional circles, at the present moment, is that of the work-house infirmaries. It is not much more than twelve months since attention was drawn to the condition of the hospitals of London Unions. The terrible revelations which were then brought under public notice by Mr. Ernest Hart led to the formation of the "Association for the Improvement of Work-house Infirmaries," whose labors have produced the Legislative Act of last session. It was but natural to suppose that the state of things in Provincial Unions would, if enquired into, be found to be quite as objectionable as that in the London work-houses. Acting on this supposition, the *Lancet* and the *British Medical Journal* have been instituting enquiries into the country work-houses, and the result has been the discovery of a system of management which, in all its horrible details, presents as loathsome a picture as that which was last year set before our eyes. An official enquiry is now taking place at the Farnham Work-house, and the evidence fully bears out the statements made in the medical journals. Among a few of the grievances, we may mention the following:—Bedridden patients washed in cold water, and dried in their own sheets,—absence of towels; chamber-pots employed as basins; floors unwashed; children kept in cold, tiled-floored nurseries,—absence of water-closets; supply of bad meat, arrangements being entered into between the master and the butcher equally satisfactory to both these individuals; cruelties practised by nurses; imperfect separation of contagious cases; absence of light and air; and, finally, starvation and mal-treatment of the vagrant poor. Indeed, the discoveries of the Commissioners of the two journals in question show us that, under the present scheme of management, it is impossible to expect a much better sanitary condition of paupers, it is thought that little reform can be achieved till a superior class of work-house masters is appointed. As it is, the "master" is in most cases very nearly as ignorant as the inmates.

A vigorous effort is being made to extend the provisions of the recent "Contagious Diseases Act" to the civil population. On Monday last, 11th, an important meeting was held, for the purpose of establishing an association whose aim is to be the carrying out of this project. Dr. J. E. Pollock, who took the chair, reviewed the labors of the Committee of the Harveian Society, and pointed out to the meeting what an amount of useful sanitary work remained to be accomplished. Observations were made by Mr James Lane, Mr. Curgenven, Mr. Erasmus Wilson, Mr. Holmes Coote, Mr. Gascoyne, and others, and various resolutions were passed, establishing the society and defining the extent and character of its [illegible]. Among several Vice-Presidents elected, were Sir Henry Thompson, Dr. Jenner, Mr. F. C. Skey, Sir E. Antrobus, and Erasmus Wilson. Messrs. Berkeley, Hill, and Curgenven are Secretaries, and Mr. Spencer Smith is Treasurer. The society is to be styled "The

Government the power to place whom it pleased in the Council.

Yellow fever [illegible] having last [illegible] black vomit since the vessel reached port. Owing to the admirably strict quarantine imposed by the authorities, there [illegible]

[illegible] Surgeons will be compe- [illegible] examinations. As advocates, it will [illegible] their examination. Every candidate in future rejected will [illegible] their examination; he will have to deposit a [illegible] The regulation is by no means [illegible] and it is certainly unfair that examiners should be subjected to unnecessary labor without receiving any compensation. As a proof of the necessity for the newly-imposed fine, I may mention [illegible] on the 26th of last month, [illegible] were rejected.

At [illegible] of the Social Science Association, Sir James Simpson called attention to the mortality of parturient women in lying-in hospitals, which he stated was [illegible] Dr. Sinclair, Assistant Master at the Rotunda Lying-in Hospital, and Mr. D. [illegible] mortality of the two classes of patients. Dr. Sinclair defends the Rotunda Hospital, and indulges in some personalities in allusion to Mr. Phelan's prejudice in favor of the Coombe Hospital. [illegible] Dublin Quarterly Journal to [illegible] as a pamphlet.

Among [illegible] I may mention the following:—Mr. H. Power, the Editor of the [illegible] Ophthalmic Surgeon to St. George's Hospital. The appointment was offered to Mr. Rouse, who, however, means to go in for the Assistant Surgeoncy, which will be rendered vacant by the series of changes consequent on Mr. Tatum, now Senior Surgeon, giving up his post. I believe I omitted, when writing [illegible] Surgeon to the Queen, to tell you that, in order to satisfy the [illegible] to resign his appointment of Assistant [illegible]

[illegible] Hospital, as it is [illegible] the vacancy will be filled up by [illegible] by examination at the Medical Board.

The Medical Journalists [illegible] based on a paper in the *Gazette Hebdomadaire* of the 8th, in which it asks [illegible] the subject has received the attention of our ablest physiologists and physicians, but the opinions expressed on the point have been terribly conflicting. More recently the matter has been [illegible] M. Gosselin, [illegible] elements of cancerous tumours are capable of inoculation. But [illegible] general principles of the contagiousness of cancer upon them. The whole of the recent discussion of the matter has arisen out of an assertion made by M. Chauffard, in his late address on the question of the contagiousness of phthisis, that cancer [illegible]

The various improvements in the medical curriculum of students, consequent on the increasing severity of the examination of the licensing bodies, have certainly done much to make students industrious; it is generally remarked in this session that the members of the several classes are more regular in attendance, and more earnest in their attention to lectures, than usual. The tendency to make all medical examinations practical is the cause of this. The student now fears that he cannot rely solely on cramming for his examiner, and he therefore dissects industriously and listens to his lectures [illegible] at St. Mary's one of your Indian Princes may be seen engaged [illegible] He is regularly entered for the lectures and hospital practice, and proposes to return to Calcutta with a couple of medical licenses. He is the Nawab Sayad Ameer Ali Khan Bahadoor, C.S.I., and he produces rather a sensation among the students.

In a letter to the *Medical Times* [illegible] Dr. Druitt suggests that even the most perfect vaccination is not an absolute preventive of [illegible] over which it loses its efficacy after a time. He thinks, therefore, [illegible] possible, but that in large communities, coming in contact with strangers, it is out of the question. This is nothing new. Dr. [illegible] asks—"Why are not the tramps, who crowd to the nightly [illegible]

Paris Correspondence.

Paris, 15th November, 1867.

The third [illegible] August was [illegible] within the limits of a letter. I will therefore analyze, and [illegible] this occasion.

M. Brunetti was the first to speak, to expose the advantages of his method for the preservation of anatomical specimens, as well as to [illegible] the results of the several processes [illegible] Exhibition, [illegible] attracted the attention, and excited the curiosity, of numerous [illegible] served, were to be seen in it, but the secret of the operative process had been well kept up to this very evening. It is this secret which M. Brunetti made the world a present of before the Medical Congress and I have undertaken to [illegible] your readers the benefit of it as clearly and as briefly as possible. The process consists of five successive operations, all very [illegible] tions of divers substances, which are made to penetrate into the [illegible] the fifth is called the dessication.

The first operation is an injection of water, the object of which is to wash out all the blood, the clots, or other organic products contained in the vessels or ducts. The second is an injection of alcohol: this is to drive out all the water. The third is one of ether. This part of the process takes some time; [illegible]

dissolves all its fatty matter. It is optional for the anatomist or pathologist to stop at this stage of preparation if he chooses. He has only to place the "pièce" in ether, and he can preserve it indefinitely. But if he wishes to proceed, he passes on to the fourth process, which is that of "tanning." M. Brunetti dissolves his tannin in boiling distilled water, and injects the solution in the same way as the other substances, previously driving out the other by means of a current of distilled water. Then comes the fifth or last process, which is the "cessation." This is accomplished by means of hot air, under a pressure of about two atmospheres, dried by chloride of lime. The operations are then finished; and specimens thus prepared remain supple and light, and preserve their volume, their natural bearings, and their solid histological elements, for of liquids no more exist. They can be handled without fear, and preserved indefinitely.

Certainly, this is an admirable discovery. It had already received a recompense, an exceptional one, at the Exhibition, and this one was crowned by the immense cheering with which the Congress received the author's communication. At the suggestion of Professor Lumble, of Karkoff, who was Vice-President at the time, M. Bouilland addressed the thanks of the Congress to M. Brunetti, and took the opportunity of expressing his satisfaction and pride at hearing so many foreign medical celebrities speak such excellent French; and he hoped that this language would become the universal one for all future International Medical Congresses. Hereupon, an English Doctor, by name Daysdale, put in a claim in favor of English, which *he* hoped would become *the* language; but as, in a room containing some three hundred persons, all spoke or understood French, whereas probably not ten knew half a dozen words of English, his good wishes are not likely to be for our generation.

After M. Brunetti came M. Laskouski, who also presented some beautifully preserved specimens, which have the advantage of retaining the aspect, the suppleness, *the liquids*, and all the physical qualities of the normal tissues. He circulated two specimens,—one of a forearm, which was two years old; and it was not only admirable as a preparation, but free from any unpleasant smell. M. Laskouski, however, told us no more than that phenic acid was part of the liquid which he used for injecting the vessels. His communication was well received, but nothing like what his predecessor's had been.

At the fourth sitting of the Congress the question submitted to it was the following:—"Is it possible to propose to the different Governments some efficacious measures to restrain the propagation of venereal diseases?" A good many papers of great value were read at this sitting, amongst others, by Messrs. Jeannel, de Meric, Rollet, and Oivre of Christiania; but the discussion was the most animated part of it; so much so, that the President had frequently to call the numerous orators to order. It is not possible for me to reproduce exactly what was said, but I will endeavour to give my readers a correct idea of the "ensemble" of the discussion, and of the principal opinions which it elicited. At the commencement of the sitting, Professor Bêhier proposed the nomination of a Commission, which should discuss and propose the measures under notice to the respective Governments, and this motion was agreed to in principle. The different works read on this question (which contained very ample statistical documents) stated the ravages produced by the disease in the different countries in which their authors practised, enumerated the measures already adopted to check them, and submitted new ones, more or less severe, in the hope of arriving, if possible, at better results. All sorts of ideas, good or bad, admissible or inadmissible, but nevertheless all worthy of discussion, as being suitable, perhaps, to one locality, if unsuited to another, were expressed in these works; but one unanswerable fact appeared on the face of the statistical evidence, and that was, that *the greater the discipline*, called in French "surveillance," *the fewer the venereal accidents*. The difficulty of the thing appeared to consist solely in the manner in which this discipline was to be carried out. For the army and navy, composed of men bound by strict regulations, this discipline is easy enough; it is carried out on a large scale, and it has already considerably diminished the number of venereal complaints wherever it is rigidly enforced. Some of the speakers suggested that the same measures should be strictly applied to the merchant service; they were of opinion that when a shipowner was about to start his vessel, the whole crew should, previous to shipment, be subjected to a searching inspection. When any one was found to have syphilis, he should there and then be sent to a hospital, to be treated and cured. It was almost incredible, they said, how numerous were the venereal diseases kept up by the merchant services of different countries; and they maintained that shipowners themselves would be large gainers by causing the crews of their vessels to be carefully inspected; for it often happens that men ship concealing complaints, which unfit them for work when at sea, and then they have to be fed and paid for nothing; nay more, it has sometimes happened that a ship has had to put into some port to land her venereal cases. Here, then, is a first measure of safety of easy execution, and capable of yielding good results if properly carried out. The idea of it is due to Dr. Jeannel, of Bordeaux, and to another gentleman whose name I did not catch.

M. de Meric, of London, who also spoke at this sitting, read a report in the name of the Harveian Society, which was ably drawn up, and very well received. Its object was to establish stringent regulations on prostitution, to subject those who practised it to careful examination, and to introduce the said regulations into England, where prostitution was mostly entirely free. This gentleman then narrated an observation of his own private practice to show the advantages that had resulted to an establishment in London, the women of which were under his care, and inspected by him twice a week; but as he also told us that this establishment was one which only admitted a certain select set of customers, it evidently was not in the same condition as similar ones in France, Belgium, or Germany, open to all comers.

Other speakers were of opinion that sanitary visits should be performed on all populations!! Such a proceeding, which would be a serious infringement on the liberty of the subject, has but a small chance of success in any country. Others again wanted patients to inform against the person who had diseased them. This measure, which, it appears, was in practice for some time in the French army, had to be abandoned, as sentiments of hatred, jealously, spite, or revenge often tempted patients to make false accusations, which led to unpleasant results, without any advantages as a set-off to them. Many doctors practising in large cities dwell on the difficulty of checking clandestine prostitution, which is unfortunately on the increase in all crowded centres, where numbers of women are on the loose, over whom the police have little or no hold. The houses of prostitution, on the contrary, where discipline can be much better enforced, are unfortunately on the decline, clandestine debauch driving an opposition coach against which they cannot compete; so much so, that several of the speakers were for urging all Governments to keep up the authorized houses, the advantages of which are proved by irresistible statistics. M. Le Fort set forth the state of prostitution and of syphilis in Paris in a series of tables, from which I am enabled to give the following figures:—There are at present in this city 3,851 women on the police registers. Of these 2,545 are "filles isolées," that is to say, they live in rooms of their own, and are only inspected once a fortnight, whilst 1,306 are told off in 155 houses, and inspected twice a week. Since this gentleman has been Surgeon of the Venereal Hospital, called the Midi, he has had 12,000 consulting patients, and has treated 1,500 in his wards, questioning these numerous patients as to the sources from which they derived their complaints. M. Le Fort has established that 58·3 per cent. of them contracted the same from "filles isolées," and others who frequent public balls and such places of amusement; whereas only 18 per cent. of them did so from the women who live in houses called "maisons de femmes." Every one knows that a certain number of clandestine prostitutes are almost daily laid hold of by the police; and it would appear from M. Le Fort's tables that out of a total of 13,818 of this category, 3,720 were found on examination to be more or less diseased. There can be no manner of doubt that women who are not on the police books are infinitely more dangerous than those borne on them; and that of these, the least dangerous are those who live in houses and are inspected twice a week. Another point which goes a it were deeper into the subject, is the manner in which discipline is enforced; the visits are very often almost illusory, on account of the paucity of doctors to the number of women to be visited. The examination is made with a rapidity which may almost frustrate its purpose, for a hasty glance at the external organs is of little avail, whereas a minute inspection of the vagina and neck of the uterus might reveal disease which otherwise must escape detection. It is now well known that chancres of the neck of the uterus are by no means rare; and as they are not easily discovered, they constitute a very frequent cause of venereal disease.

that its partizans admit only one virus, which is of variable intensity, the operation their own time and virus This idea is, at all events, they were only preserved from catching syphilis hereafter, on condition of giving it to themselves by inoculation. This is have had, in his day, the courage of his opinions, attacked M. was met by this gentleman with the offer of furnishing his observations to the Congress, and by a declaration that scientific Until then I say that, if you hesitate, you do not feel the conn silly reply, to the effect that it was his life that was wanted, in Bouillaud called him to order, and said that M. Ricord had every right to ask him to experimentalize on himself, as that was had inoculated themselves with what they firmly believed not refusal. For a moment every one thought that this gentleman was coming forward with an offer of his arm in support of his awaited "scientific objections," which they were made him in abundance by M. Ricord, who here gave almost a lecture on syphilis, in which he briefly ran over his works and opinions, ending with the reasons which had converted him from an "uni- turn to speak, he certainly did so with great talent and fluency; and he, moreover, supported his views with numerous quotations and documents, which bore them out fully; but in the face of the names of the brave men who had proved on themselves the sincerity of their convictions, Dr. Auzias' persistent refusal of following their noble example, when it was well known that he

ability with which he had submitted it. In quitting the chair, he it; that it was fraught with danger, inasmuch as chancres that the method itself was attended with serious inconvenience, and had never been less than 96, which represents a treatment of several months.

of women, expressed his belief that the system "of inscription and compulsory visits was objectionable, inasmuch as it lowered women more and more, and asked whether there was less syphilis in Paris than in London. He thought not." Possibly; but why? Because clandestine prostitution baffled the good results of that which was legalized, and under surveillance. Before taking leave of this subject, I must add that its dis- speakers were talking wider and wider of the question, as submitted, M. Crocq, of Brussels, rose, recalled them to it by reading it out, and asked whether, with reference to it, as set forth in the programme, he was, on his return to his country, to propose the syphilisation of all the Belgians. Another gentleman, a Dr. Villemin, rose to show himself as a good specimen of the innocuity of syphilisation. "Behold me," he cried in a I am quite well." "Well," replied M. Ricord, "why does not Dr. Auzias-Turenne imitate you?" "I have renounced marriage, but he has not," replied M. Villemin; to which M. Ricord, who is very fond of joking, told him that he was very wrong in having renounced marriage; that he ought to consider himself most eligible for, and valuable as, a husband, inasmuch as being incapable of contracting disease, or communicating it, "vous etes un phenix pour la femme qui vous prendra."

A supplementary sitting was required to terminate this discussion on syphilis, and the end of it was marked by a good deal of animation in voting for the members of the Commission, as suggested by Professor Bèhier. The majority of the Con- peace was restored.

The day following these somewhat noisy proceedings, nu- reunions in France as in England. The greatest cordiality prevailed at it; and when the champagne was brought on, many toasts were proposed, listened to with attention, and well Jaccond, Teipier, and Ricord. M. Bouillaud came out very strong, borrowing two lines from Corneille, to define the Con-

in proposing "the prophylaxy of syphilis" This, he said, will have been the best result of the Congress. The end of the feast, however, was saddened by the news of the death of Velpeau, whose funeral all present resolved there and then to attend in a body, as representatives of the Congress.

The question relative to venereal diseases having taken up twice as much time as it ought to have done, and more than was allotted to it, the remaining ones on the programme were passed over somewhat hurriedly, and with very trifling discussions. The question which was to have occupied the fifth sitting was the following:—"On the acclimatisation of European races in hot countries." This important subject would hardly have attracted the attention of the Congress, had not M. Simonot, a distinguished anthropologist, risen to discuss it. After well defining the question, this speaker came to a first conclusion, namely, that the danger of hot countries for European races resides less in their high temperature than in certain atmospherical and telluric circumstances peculiar to them, and that malaria is for Europeans—who do not possess the immunity against it which dark races do,—an enemy which they must conquer by extirpating him, or they will be annihilated by him.

malaria exists is impossible. On the contrary, in countries which are only hot, acclimation is easy enough, if certain hygienic conditions are fulfilled, which vary according to localities. M Lombard, of Geneva, also spoke on the subject of atmospherical influences on mortality in Europe. His conclusions were, that cold and misery are two powerful causes of death in Northern countries and that cold acts most prejudicially on the aged. He further remarks that malaria is also a powerful cause of mortality even in Europe, and that no means should be left unemployed to destroy it.

A few words now on Paris medical staff events. Another death has struck down a man full of hope and promise, Dr. Foucher, one of the Professors Agrégés at the Faculty. He died young, like Follin, and at the very moment that he was going to reap the reward of the position which, by dint of hard work, he had made for himself. However, there is no lack of men to take his place, which was a complimentary chair of "Ophtalmologie" at St. Louis' Hospital.

The chairs left vacant by the death of Velpeau and by the resignation of Nelaton have been filled up, as I announced they would be, by the nomination to Clinical Professorships of Messrs. Jarjavay and Richet; the former succeeds M. Nelaton at the "Hospital des Cliniques," opposite the School of Medicine, and the latter takes the Clinical Chair of Surgery at the Pitié, vice Professor Gosselin, who exchanges to the Charité.

The Clinical Professors of Surgery, therefore, now in Paris are—Messieurs. Jaijavay at the Hospital des Cliniques; Laugier, at the Hotel Dieu; Gosselin, at the Charité; and Richet, Pitié.

This leads me to say a few words of a remarkable case now in M. Richet's wards, which is giving physiologists a good deal of trouble to interpret.

A young woman employed in a cartridge manufactory fell in such a manner that her forearm, a little above the wrist, bore violently on the edge of a sheet of copper used in the process of fabrication. A transverse wound was the result of the accident. The skin, both arteries, (radial and ulnar) a tendon, and the median nerve were divided.

The divided surface of the nerve was not clean and regular, but both ends were separated; so much so, that one having been found, the other had to be sought for. Now, though the central end was exquisitely sensitive, the *peripheric end was sensitive*. The patient experienced tolerably severe pain when M. Richet cut a piece of it off in order to make it even, as well as to obtain a portion for microscopic examination. The central end was not touched, for the slightest movement of it produced excruciating pain. M. Richet, before bringing both ends of the wound together by a suture, examined the state of sensation and motion in all the parts to which the median nerve distributes itself below the wound. As to muscles, the median nerve animates those of the thenar eminence and the two first lumbricales. Voluntary motion appeared lost in them. The median nerve further presides over the sensibility of the skin of the thenar eminence of the middle palmar region, and of the palmar surface of the three first fingers, as well as of the outer half of the fourth. On all these points sensation appeared to have been retained, though blunted on the index finger, which was, however, covered by a thick epidermis.

The patient mentioned, without making a single mistake, each point as it was being touched with a piece of paper, whether the thumb, the palmar surface of the middle or the ring fingers, or the hand. She could distinguish perfectly the sensation of contact from that of pain, when pricked on those spots with a pin. Nay more, when a strongly-heated object was brought near them, she felt a sensation of burning.

After all these explorations, the two ends of the nerve were united, and fixed by a point of suture. This operation in no way modified the sensibility. Since then several medical men have seen this patient—Messrs Vangetti, of Padua; Clark, of London; Duchenne, of Boulogne; and others. The results they obtained were similar to those that had been observed before the re-union of the nerve. Since then, that is, 18 days, sensibility has appeared to become gradually more delicate, and since last week hyperesthesia has been superadded to the prichings in thenar eminence, and then intermittent pains towards the fingers. On the eighth day M. Duchenne explored the electrical motility of the muscles of the thenar eminence. He was unable to make them contract by an energetic current passed through the skin.

Consequently, in this case, the section of a mixed nerve, the median, has not induced the abolition of all sensibility in the parts to which it distributed itself. Any doubt of the fact is impossible, for all chances of error were carefully avoided, and cross examinations, as it were, made by able men, who did not easily accept as true that which appeared to them incomprehensible.

(These facts are taken from a published report.)

The Progress of the Medical and Collateral Sciences.

Microphyta and Microzoa in the human skin.—At a meeting of the French Academy, on October 16th, M. Lemaire read a very interesting memoir on this subject. He stated that the ordinary dirty matter which is thrown out over the skin by the sudoriparous glands is full of minute organisms, which may be readily detected on submitting a portion of the matter to examination with high magnifying powers. The microscope, says M. Lemaire, reveals to us the existence, upon the skin, of numerous spherical ovoid and cylindrical transparent bodies, such as are found in a confined atmosphere, of myriads of bacteria, vibrios, and of small specimens of *spirillum volutans*; and, finally, of ovoid monads. The matter which yielded these numerous bodies was found, on chemical examination, to redden litmus paper. It is a remarkable fact that some of these minute organisms were found in the cerumen. M. Lemaire states that he has not been able to discover any of these organisms in the mucus of nasal fossa, vagina, or urethra.

Action of boric acid on albuminous substances.—Herr Brucke continues his enquiries into the action of boric acid on albuminous substances. At one of the recent meetings of the Academy of Sciences of Vienna, he stated that a solution of this acid of only 2 per cent. strength does not prevent the coagulation of blood, does not curdle milk, and does not produce syntonine by its action on albumen. On the other hand, the borate of soda, like the carbonate of the same base, transforms ordinary albumen into precipitable albumen.

Experiments on artificial scurvy.—In conducting some observations upon the action of common salt on the blood-vessels of frogs, Herr Stricker has very nearly demonstrated that the peculiar ecchymoses of scurvy are produced by the action of chloride of sodium on the capillaries. His experiment was thus conducted. Having placed a frog's foot under the microscope, so as to distinctly perceive the circulation of the blood in the capillary net-work, he then injected a solution of salt beneath the animal's skin. He soon detected a change in the movement of the blood corpuscles. These bodies accumulated in great numbers in portions of the capillary net-work, and formed partial ecchymoses by reason of the stagnation of the blood-current which they produced. The result of this experiment led Herr Stricker to make further trials. In the course of his subsequent observations he discovered that when chloride of sodium was admitted in large quantity into the circulation of frogs, dogs, and other animals, the bodies, when submitted to *post-mortem* examination, exhibited numerous livid patches, which Herr Stricker considered to be genuine scurvy ecchymoses.

Employment of yeast in dyspepsia.—This old remedy, which has for some years fallen into disuse, has recently been revived by M. Bergeret, who states that he has found it effect cures in obstinate cases which had resisted all other remedies.

How carbolic acid affects the tissues.—This subject is just now of considerable interest, from the fact that very conflicting accounts of the effect of carbolic acid in wounds are given by different English and Continental Surgeons. The researches which have recently been carried out by Herr Newmann, of Königsberg, throw some additional light on the question. They lead their author to conclude, *first*, that when concentrated, this acid acts as a powerful caustic; *second*, it gives transparency to the tissues, without causing them to swell up; *third*, it preserves, rather than corrodes, the tissues: but this preservation is that of mummification rather than anything else; *fourth*, it is extremely beneficial in both lupus and eczema.

[illegible]

[illegible]

[illegible]			3·42
Combined sulphuric acid	...	...	0·2
[illegible]			[illegible]
[illegible]			[illegible]
Water	...	...	94·0

Inaccuracy of the storm-glass.—Though the subject is [illegible] hear that its efficiency has been recently very carefully tested by Mr. Charles Tomlinson, of King's College, London. They [illegible] absolutely valueless. Mr. Tomlinson's experiments are published [illegible] influenced by variations in temperature; it is, in fact, a rude sort of thermoscope, vastly inferior to the ordinary thermometer [illegible]

Values of different specimens of jalap.—Mr. Southall, of [illegible] of specimens of commercial jalap, and has demonstrated that the ordinary samples of the drug vary extremely in therapeutic value. The following 16 examples give evidence of this:—

	Description.	Resin.	Market price.
No. 1	[illegible]	[illegible]	[illegible] lb.
,, 2	,,	12 ,,	6d. ,,
,, 3	[illegible]	9½ ,,	6d. ,,
,, 4	,,	10½ ,,	4d. ,,
,, 5	,,	10½ ,,	4s. ,,
,, 6	,,	9½ ,,	4s. 6d. ,,
,, 7	,,	14½ ,,	5s. 6d. ,,
,, 8	,,	9½ ,,	2s. 6d. ,,
,, 9	,,	7 ,,	2s. 6d. ,,
,, 10	Vera Cruz	15½ ,,	4s. 6d. ,,
,, 11	,,	17½ ,,	4s. 6d. ,,
,, 12	,,	7 ,,	1s. 6d. ,,
,, 13	,,	12½ ,,	4s. 6d. ,,
,, 14	,, ,, ...	23 ,, ,, ...	4s. 4d. ,,
,, 15	,,	9½ ,,	4s. 6d. ,,
,, 16	,,	11½ ,,	4s. 6d. ,,

Mr. Southall has made experiments on the relative purgative effects of the two varieties, and states that results were the same [illegible] darker than that from the Vera Cruz variety, and has a peculiar [illegible]

[illegible]

Conducting his observations on the nerves of mucous membrane, he found that the *nervi-nervorum* are distributed in spirals [illegible]

The Micro-spectroscope in medico-legal inquiries.—Mr. [illegible] spectroscope, which, according to Mr. Sorby's statement, gives a [illegible] that of belladonna; but these may easily be distinguished. A [illegible] istic spectrum.

The laticiferous vessels of plants.—Herr Schultz denies that M. Trécul has any claim to be the discoverer of the [illegible] latex. M. Trécul admits that M. Schultz is quite right, and that he, M. Trécul, never laid claim to the discovery which he says was made by Malpighi and Duhamel. M. Trécul claims only to have been the first to point out the relation of the latex vessels to the rest of the vascular system.

Absorption of carbonic acid by the roots of plants.—It is often stated in text books on botany that a good deal of [illegible] which has been presented to the French Academy, (November [illegible] M. [illegible] place. Having submitted carbonic acid in various forms to the [illegible] roots [illegible]

The affinities of the Mesotherium.—M. Serres has just concluded his series of memoirs on the anatomy and relations of the great extinct mesotherium. He states in his general conclusions that this animal approaches the rodents by the arrangement of its massive teeth; in its general form it resembles the [illegible] of the head and limbs, and the bifurcation of the last phalanx. Finally, its form of head and disposition of the encephalon relate it to the cetacia, to which M. Senechal believes it to belong, [illegible] M. Serres thinks that the mesotherium should be ranked between the pachydermes and rodentia.

A new microscope stand.—Dr. L. W. [illegible] has devised a form of stand for the microscope, which will, we should think, be found very useful by those engaged in histological studies at night. The stand is simply a mahogany tray placed on three rollers, and carrying on a vertical rod the lamp which lights the mirror. When the mirror is arranged, the worker has no further trouble. When preparing his specimen, he can push the [illegible] he can [illegible] of focus in the mirror, or alteration of the position of the lamp.

Action of electricity on blood corpuscles.—In experiment[illegible] of the blood, Professor Newmann found that the electric current [illegible] This, in some measure, is in accordance with Dr. C. B. Radcliffe's theory of the action of muscles, *viz*, that the nervous or electric charge keeps the muscle on the stretch; but when the electricity is discharged, the natural cohesion of the tissue causes it to contract.

Effect of the constant electric current on the spinal [illegible].—[illegible] that, in confirmation of Nobilis' views, convulsions in an animal may be readily stopped by passing a constant current along the cord. Herr Ranke found that it was quite impossible to pro[illegible] current was travelling along the spinal cord. It was found also that, though a strong current prevented the tetanus produced by strychnia, it did not prevent the death of the animal. A [illegible]

ORIGINAL COMMUNICATIONS.

FURTHER REMARKS ON THE SO-CALLED CONTAGIOUS FEVER OF OUR INDIAN JAILS.

By David B. Smith, M.D.,
In Medical Charge of Mussoorie.

(Continued from Vol. III., No. 2, page 32.)

From what I have already written, it will be seen that I am quite prepared to admit the truth of the following propositions regarding this fever of our jails:—

(A).—That it *is* contagious.

(B).—That, consequently, it *is* capable of being imported into a jail from without.

(C).—That quarantine ought *certainly* to be put in force where there appears to be any chance of such an occurrence.

But, again, there are other considerations, even more important still, upon which I would particularly insist. They are the following:—

(1).—That the disease described by Walker, Bateson, Gray, Wikeley, De Renzy, and others, and so frequently alluded to in the Bengal Sanitary Reports as "the peculiar contagious fever of our jails," is simply the relapsing fever of Great Britain.

(2).—That it is neither typhus, nor typhoid, nor yellow fever, nor malarious remittent, but a distinct and specific disease already known and recognized as such by the Medical Profession in every country.

(3).—That we have good reason for saying that it sometimes originates *de novo* in our jails.

(4).—That conditions of general privation and want did exist, to a great degree, in Upper India, concurrently with, or shortly previous to, the appearance of this epidemic. That the famine of 1860-61, and the comparative destitution prevailing for some years after, are fully capable of accounting indirectly for the appearance of the fever in question.

(5).—That bad sanitary arrangements in matters of diet, space, ventilation, clothing, drainage, and the like, have much to say to its existence and spread; and that such insanitary conditions were not unknown in our jails at the time alluded to.

(6).—That the title given to this disease by the Bengal Sanitary Commision, *viz.*, "the peculiar fever of our Indian jails," is vague, unscientific, and, in one sense, incorrect.

(7).—That were the principles of nomenclature which have produced this title to be applied generally to the whole scope of medicine, we should very soon arrive at a stage of confusion in matters of scientific fact, so hopeless that even the most intellectual men of our profession could not easily undo the mischief thus effected.

First, then, as to this being specific relapsing fever. In my first paper I showed how exactly Dr. Walker's description of the disease, as observed at the Agra Jail in 1860, answered to that of relapsing fever, in its mode of invasion, the duration of the first paroxysm, the date and character of the relapse (or relapses), the symptoms and signs attending the crisis, and the very tedious convalescence. It may here be mentioned also that the complications and sequelæ of relapsing fever were accurately defined by Dr. Walker, *viz.*, jaundice, affections of the respiratory organs and of the bowels, congestion of internal organs, sudden syncope, hæmorrhages, muscular and arthritic pains, &c., &c. But the feature of the disease, which of all others most distinguished it from typhus was the early crisis, and intermission of all febrile symptoms. The patient rapidly got worse about the fifth day. But suddenly, "within a couple of hours," "either on the fifth, seventh, or ninth day," all his symptoms improved, "he has become quiet, relaxed, and placid;" "beyond weakness and a feeling of being bruised all over, he declared himself well." Nothing could be more graphically true than this description, by Dr. Walker, of relapsing fever; and inasmuch as it is correct in this respect, insomuch does it fail to apply to typhus.

Let me now ask, how does Dr. Bateson describe the disease? Somewhat thus. "Shortly after a meal the patient's head began to swim and to ache; he had a three-blanket coldness;" he had also distressing muscular pains, vomiting "of a green watery bile," (but never black vomit,) great epigastric tenderness, constipation, enlargement of the liver, but no eruption on the skin. He was "listless, yet perfectly clear in his head;" jaundice appeared about the fourth day. "On the fifth day a critical sweating, or, less frequently, a diarrhœa, ushers in the beginning of convalescence." The "pulse falls, appetite is astonishing." "He is convalescent; cheerful that he has got over it; he is doing capitally." "So soon as the crisis, as soon appetite, began to come back, rush back! Convalescents were positively ravenous." Instead of the old complaining about his muscles' pains or his joints' aches, it was '*bhookha, bhookha; bhook lagta, sahib.*' "*I am hungry now.*" Later he has a relapse, when his illness "differs not much from the one you thought he had got over. His convalescence is prolonged. He thrives slowly, running the gauntlet of either a sloughing cornea, or an all but uncompromising flux." From being "almost a skin skeleton," he gradually becomes "something like a human being again." "Three-fifths of the cases *relapsed*, 79 indeed became so well that they had been discharged to the convalescent's ward or yard, but came back again, about the twelfth day from original seizure, as bad as ever. Of the 79, 15 came back a third time; had two relapses. We had prisoners who were ill with this very fever in 1864, and who were also taken with the same sickness during this epidemic." "The fatal cases occurred generally between the 4th and 7th day, fatal cases from sequelæ of course excepted." "Men die suddenly that you do not expect to die." "Quinine as a preventive is of no use whatever." "As in the epidemic of 1864, so in the present one, I recognize no other disease than the relapsing fever of authors." "The best help to the doctor is the kitchen."

I have abridged this account from Bateson, and so, to a certain degree, have done injustice to his description, but what I have reproduced conveys an idea of the important points at issue.

The picture of the disease found in Dr. Gray's Report is even more minute in detail than Bateson's. From the first sudden giddiness and rigor, to the description, at last, of the general anatomical lesions observed after death, there is really *nothing* wanting to establish, beyond all doubt, the identity of true relapsing fever. The countenance, the pulse, the tongue, the skin, "the absence of all eruption," the thirst, the character of the respiratory movements, the state of the nervous and muscular systems, the condition of the internal organs, the occurrence of death from sudden collapse, the complications of pneumonia, enlarged liver and spleen, jaundice, epistaxis, diarrhœa, dysentery, post-febrile ophthalmia, glandular inflammation, partial paralysis, tedious convalescence, severe arthritic pains without effusion into the joints, and the absence of lesion of Peyer's patches, all establish the fact of the disease being relapsing fever with almost as great certainty as the early crisis itself, followed by a voracious appetite, the critical copious perspiration and intestinal flux, and the three or even four recurrences of relapse, "which were not to be warded off by quinine." Here is Dr. Gray's sketch of his patient about the sixth or seventh day:—"With the exception of a general feeling of weakness and pain in the limbs, joints, or muscles, the patient now expressed himself well; and if his appetite had gone, which was not invariably the case, it returned, and he was clamorous for food. In this state of apparent convalescence he would remain for several days (from 6 to 12 or 14), when all the original symptoms

symptoms indicating the change. The pulse became slower, and allowance of food. He continued steadily to improve for a period a fifth. Of the cases attended with diarrhœa, an immense proportion proved fatal. After the twelfth day, diarrhœa was the im- skin, which had become dry, and hard, and leathery, and covered to afford great relief in this condition. These cases retained this resembles the ordinary course of a case of typhus fever,

Dr. [illegible] has put [illegible] enquire what he has to say regarding it. In his report to the Punjab Government, dated 20th August, 1864, he writes as almost identical in both jails. The anxious flushed face; the dry tongue; jaundiced conjunctivæ; pain on pressure over the epigastrium; great depression of the muscular and nervous and strongly marked tendency to repeated relapses. The lesions The spleen was enlarged; the liver was in all cases more or less diseased; the large intestines were more or less congested, in some cases were ulcerated; the small intestines were in *no case* ulcerated. Dr. Gray was most careful in looking for this con- expressly with the view to ascertain whether there was ulcera- tion of the small intestines (Peyer's patches); but in no case did either he or I find this condition. The symptoms detailed by Dr. Gray are clearly those of a continued fever attended by frequent relapses. So are those given by Dr. De Renzy."

Again, Dr. Dallas continues thus: (further on in his Re- port) "The symptoms of this disease are a sudden invasion marked by chilliness and shivering, a quick pulse, a white moist tongue becoming dry and brownish, tenderness at the epigastrium, vomiting, jaundice, enlarged liver and spleen, hot dry skin, constipation, [illegible] pains in the back and toms, and frequent relapses; after death no specific lesion, but symptoms given by Dr. De Renzy and Dr. Gray."

A little further on, Dr. Dallas, arguing on the meaning of the term "famine fever," thus writes:—"If it be admitted that this designation may be applied to a disease the result of feeding at a minimum inconsistent with health, combined with other conditions tending powerfully to depress the and I conceive that, from a comparison of the phenomena recognized as constituting relapsing or famine fever, and those which are reported to have occurred, we have no alternative left but to adopt this nomenclature."

opinion on this subject changed since then? In his last Report following:—"Concerning this fever, the Hon'ble the Lieutenant-Governor, in remarking on the Report for last year, instructed me and have obtained from some replies to my enquiries. The information as to the character of this fever contained in the replies I have received, in no way varies from that already before Government. It is described as a continuous bilious fever, with a remarkable and characteristic tendency to relapse." A few pages further on, in the same Report, Dr Dallas thus writes:—"There is no doubt, in my mind, that several of these cases of fever owe their origin in a great measure to unwholesome or insufficient food, and the disease, as described by some Medical Officers, is closely allied to the famine fevers of other countries."

What did the Judicial Commissioner of the Punjab, with the letter to the Secretary to the Government of the Punjab, dated 2nd September, 1864, he wrote as follows:—"2. I think it impossible to read the Reports of Drs. Dallas, Gray, and De Renzy without feeling convinced that they rightly describe the epidemic as relapsing fever or famine fever, and that it was caused mainly by—

I.—Intense cold.

ing from insufficient food.

III.—Overcrowding.

in our jails have by any means been starved; but while the quantity of food was just sufficient, there was a want of variety state of health which enabled them to withstand the other morbific influences which surround them."

Even in the Reports of the Sanitary Commission, we find *ample* proof that this disease is relapsing fever, and nothing informed that in 1860 both the Agra and Meerut Central Prisons were attacked with a very malignant fever, in which relapses were common. At page 66 of the same Report, Dr. Kilkelly reported to have observed in the Allygurh jail two or three relapses in the same disease. Again, at page 92 of the same Report, the Civil Surgeon of Umritsur describes two relapses of the same fever.

In the 3rd Sanitary Report (page 9) we find these words:—"The Ladwa Report says others got bad again after getting better. Some had bleedings from the nose; some bled from the bowels." At page 10 of this Report, Dr. C. M. Smith, Civil Surgeon of Lahore, writing of the disease, says:—"When it attacked the lunatics, it at once assumed a relapsing form. At page 14 of the same Report, a severe epidemic of this disease is said to have occurred at the Island of Reunion; we are further informed that it is there recognized as *la fievre recurrente*.

At page 16 of the same Report the Sanitary Commission write as follows :—"Because the disease resembles the jail fever of Europe in many important particulars, (the italics are mine) it by no means follows that it has been generated among the prisoners by insufficient food and other bad sanitary conditions." Shortly before this quotation we also find the following :—"Three years ago Dr. Gray, in describing the fever as it occurred among the prisoners of the Lahore jail, pointed out its strikingly resemblance to many particulars (the italics are again mine) to the 'relapsing' or 'famine fever' of Europe. In support of this view of the case nothing new has since been advanced." I am perfectly ready to allow the truth of this statement. What more in the name of reason, is required? Was this malady that has been described by so many competent writers as relapsing fever really not the disease at all, but typhus or yellow fever, or malarious remittent, or typhoid, or something entirely different? It seems ludicrous to speculate further. I leave my readers to draw their own conclusions whether or not, in its symptoms, in its course, complications, sequelæ, morbid anatomy, and general history, it can reasonably be said that the disease above alluded to was other than true relapsing fever. Surely I have given above no conjectural or speculative evidence. I have purposely abstained from bringing forward any theory of my own. I have simply adduced, as far as lay in my power, from the writings of others, the irrefragable proofs of the truth of the opinion which I hold. Why, it may be asked, should the Sanitary Commission be so loath to allow that this is simply relapsing fever? Is it because the greatest authority, perhaps, on fever subject writes—"Relapsing fever is the appanage of poverty and destitution?" (*Murchison*). The Commission, it is true, [illegible] in any way an element or factor in the production of this disease. Hence, perhaps, their reluctance to admit its relapsing character. By the Commission the disease has already been set down as typhus, and this only two years ago. How, then, it may reasonably be asked, can it possibly, in so short a time, have become quite another disease? In the 2nd Bengal Sanitary Report it is authoritatively laid down that this is typhus, and consequently typhus it must remain to the end of the chapter. He who will say that it is relapsing fever will be met by the Stoical maxim—"*Ignoramus non dicat deus*." Under such circumstances, it has happily been remarked how natural and reasonable is it for us to say :—"We greatly esteem Chrysippus, yet we respectfully differ from him on this point." The medical logic of the present day is fortunately regulated by no Stoical maxims. It is amazing to me how the Sanitary Commission, or any impartial judges of the facts above cited, can for one moment hesitate to allow that here we have genuine relapsing fever. It is true that the reluctance displayed by some men to see things in their true light is sometimes marvellous. The reasonings, on this subject, of the Bengal Sanitary Commission instinctively remind one of the conduct of the modern disciples of Aristotle, when, from the top of the tower of Pisa, Galileo proved to demonstration (by the *simultaneous* fall of bodies of different weight falling on the pavement) that the rapidity of descent of such bodies is not in direct proportion to their weight. The Aristotelians could not but hear and see the proofs, yet were they unconvinced, because Aristotle, nearly 2,000 years before, had propounded a different doctrine. It has been forcibly said that "some men are dogmatical in the midst of ignorance, and often sceptical in the midst of knowledge." I only hope that this cannot fairly be asserted of the Bengal Sanitary Commission.

Secondly, I pass on to the proofs of this being a *specific* disease different from typhus, typhoid, yellow fever, and malarious remittent.

The low remittent fever of this country, however severe it may be in its attack, has never, so far as I know, been declared to be contagious, its [illegible] and [illegible] like [illegible] to-

bations, more or less regular diurnally. The *worst* paludal fever is the *least likely* to present us with a sudden and perfect intermission lasting several days; nor do we in such cases ever remark the other features of regular crisis and of regular relapse on distant yet determinate days. It is the opinion of the Sanitary Commission that this contagious fever of our jails is the same as the epidemic fever which has, of late years, been devastating the villages of Lower Bengal. I think a careful consideration of the true characters of the latter disease will at once entirely separate it from the relapsing fever of our jails. It may be remembered that in the beginning of 1864 His Honor the Lieutenant-Governor of Bengal deputed a Commission to proceed to the fever-stricken districts to enquire into and to report on the causes of the epidemic, its course, and the best means of checking its further progress. This Commission consisted of men particularly well qualified for such an enquiry. Dr. F. Anderson, Deputy Inspector General of Hospitals, was the President, and the Members were Dr. Charles Palmer, Presidency Surgeon; Dr. J. Elliot, Civil Assistant Surgeon; Mr. D. J. McNeile; and Baboo Degumber Mitter. No better selection of men could have been made by the Government for such an object. They went to the districts of Burdwan, Hooghly, Nuddea, and the 24-Pergunnahs; they visited and carefully inspected many villages in those districts. What did they discover? Did they report that they had come upon "a very peculiar contagious fever," dependent on an animal poison, like that so much dwelt on by the Sanitary Commission? On the contrary, they describe a deadly remittent prevailing "in the low, ill-ventilated villages lying along particular nullahs and half-stagnant rivers, such as the Baeng Nuddea, the Upper Nobogunga, the Bheirab, and the Chitra." We are told that when the disease becomes chronic it assumes an intermittent type, and that, in almost all such cases, "enlargement of the spleen, anasarca, and a general anæmic and emaciated condition exist." It is said to be identical with the remittent fever of the inundated eastern districts. The disease reached its height in August, September, and October. "By the end of December, almost complete cessation has taken place." The tract of country suffering from the epidemic was a *most* malarious one, remarkable, during the worst fever months, for a soil saturated with moisture, and, at all times of the year, for deficient drainage. The infected villages were surrounded by the most dense foliage, through which the sun's rays scarcely penetrate; the atmosphere around is described as being perceptibly damp and heavy; the villages are surrounded by large holes in the ground (the result of excavations made for building purposes). There are also old neglected tanks around. From these filthy sources the people obtain their drinking water. Vegetable decomposition, however, is not the only abomination there met with. The Commission tell us that "in the Mahomedan quarters of villages the dead are constantly buried on the very borders of the tanks;" and that in the case of the Hindoos, in times of prevalent disease, only a few bodies are effectually destroyed by cremation, the half-burnt remains being "simply thrown away, without funeral rites of any kind, into nullahs and rivers." Sometimes corpses are simply cast out in any direction, and thus, we are told, the air is poisoned for miles with the foulest effluvia. The disease attacked all classes, rich and poor, young and old, indiscriminately. The first and chief cause of the disease was found to be *malaria*, which in those districts arises on all sides from the vast accumulations of decaying vegetable matter which completely conceals the ground, and daily, but chiefly at night, emits the most deadly vapours. In point of fact, the Report of the Commission, which is minute and careful throughout) unequivocally establishes the fact that the epidemic fever of Lower Bengal was simply a "congestive remittent" caused by malaria, coupled, as might be expected, with many other insanitary conditions. We are told that in some rare instances children of fever-stricken mothers, delivered at the [illegible] were born with a [illegible] But the most

Gram Cuha, which was a very unhealthy place. Whilst there

from excessive vegetation," its tanks being "comparatively clear and open." These facts, culled from the interesting Report of

which has been so prevalent in our jails since 1860.

into our reckoning. It is not a relapsing fever at all; but for

dissimilar. Yellow fever attacks the same person but once; in the case of relapsing fever it is quite otherwise. It was particularly observed in our jails that prisoners suffered from the same disease in different epidemic years. Because a patient is yellow, and at the same time feverish, it may be simply absurd to declare that he is suffering from an attack of specific

almost

glands of the intestines been observed.

It may be necessary to say a little more regarding the differences between relapsing and *typhus* fever. The more is this necessary, inasmuch as the Sanitary Commission (whilst they have published many accounts of the late epidemic disease which relapsed, exactly as so-called famine fever is known to do in Europe) have concluded that it is genuine typhus.

It was, I believe, Dr. Henderson, of Edinburgh, who first

dependent on a special poison; the one infecting independently of the other, and in its attack affording no immunity from the influence of that other. Dr. Wardell, one of the greatest authorities on the subject, thus wrote in the *Lancet* for November 17th, 1860:—"Of relapsing and typhus I can speak with

elaborate data their distinct essence, and such doctrine still holds good. In more than 1,200 cases I never saw typhus and relapsing blended. The infection caught from one fever never produced the other. Like always produced like, in a multitude of instances. The proofs of the non-identity of their essential cause were as clear as the common-sense

of small-pox and scarlet fever. Dr. Jenner, in the *Medico-Chirurgical Transactions, XXXIII*, 23, established the difference, in character and pathology, between these two fevers. Sir Thomas Watson writes very definitely on this point. He says:—"A third form of continued fever, called the *relapsing* fever, is readily distinguishable by well-marked features of

At another page he says "I have endeavoured to establish this to be, indeed, a *distinct*, but by no means a *new*, form of fever." Further on he dwells upon "the many points of

Jenner declares, and my own experience is in agreement with his, that he never saw jaundice in typhus or typhoid fever." Dr. Wood, of Pennsylvania, in his Practice of Medicine, thus writes of relapsing fever:—"It differs entirely from both the above fevers in its course. The tendency to relapse, so characteristic of this, is wholly wanting in typhus." Dr. Murchison, than whom there is no greater authority on the subject, writes regarding it as follows:—"It is, in my opinion difficult to conceive how any person, who gives the evidence now accumulated in reference to continued fevers, a fair consideration, can arrive at any other conclusion than that they are as distinct as small-pox, measles, and scarlet fever." "In the

than relapsing and typhus." At another page he says "that in their course and symptoms, the two diseases are as distinct

of the Edinburgh Infirmary made a regulation that there should be separate wards for typhus and the short fever." Murchison also corroborates the above cited opinion of Wardell that typhus invariably produces typhus, and relapsing fever produces relapsing fever. Dr. Gray, in his Report previously alluded to, writing of the epidemic that prevailed in the Lahore Central Jail during the latter part of 1863 and beginning of 1864, says:—"I had little difficulty in coming to the conclusion that typhus was not the type of fever generally prevalent." "It will be asked was it typhoid or enteric fever? I am convinced it was not." "The symptoms and course of the disease convinced me that it had more in common with the continued 'relapsing' or 'famine fever' which has for some time been recognized as a separate type of fever, quite distinct from typhus or typhoid and generally occurring in a widespread epidemic form."

From the above, I think we may take it for granted that there are indeed great and specific differences between relapsing and typhus fever; and yet it would appear that in India there exist

fied. In the late epidemic of our jails, it is to be remembered that no measly eruption was discovered; that relapses, which are very rare indeed in typhus, (only one instance having occurred of such a thing out of 5,000 cases at the London Fever Hospital) constituted the *rule* in the present epidemic; that jaundice, which, as we have seen, neither Dr. Jenner nor Sir Thomas Watson have ever observed in typhus cases, very generally occurred in our jails; that the mind remaining clear, and delirium being absent was much more common than in typhus; that the crisis, both in date and character, differed entirely from that of typhus; and that the abrupt invasion, the sudden falling of the pulse and temperature, and the profuse perspirations occurring on critical days, the strange voracity of appetite so frequently observed, the duration of the disease taken as a whole, the enlargement of the liver and spleen, the peculiar pains of the muscles and of the joints, and the post-febrile ophthalmia, all point to the fact that

I submit that it is of *very great* importance that the Sanitary Commission should determine the precise nature of this fever. Such a consideration has a significance far beyond its merely local interest. It is capable of throwing much valuable light on the general field of medicine. The "cropping out" of a disease in India, or elsewhere, which has never before been there distinctly recognized, in a manner resembles the discovery of some great geological change which heretofore had remained unobserved by philosophers. It is impossible to estimate the full practical value of a simple observation of this sort. It is scarcely too much, however, to say that, like the careful description of a new "formation," it may illuminate a new page in the history of man. The stories of *Siluria* and of the Old Red Sandstone, with all their curious characteristics, are no of more interest to the student of geology than are the records of famine fever in different countries to the philanthropist and the medical philosopher. Besides the abstract interest

attaching to this subject, it is surely at all times of unquestionable importance to distinguish between the different species and varieties of disease: and this not even so much with the object of accurate diagnosis, as for the carrying out of a rational and successful mode of treatment.

In the face of all the facts which I have above alluded to, the Sanitary Commission, whilst they admit the similarity between famine fever and the epidemic of our jails, declare "it must also be borne in mind that there are also important differences, and among them the much more fatal character of the Indian fever is specially noticeable." The important differences thus alluded to are not even enumerated. This *hint* of their existence is all that has been thrown out by the Commission. The greater fatality attending a disease in one country as compared with another may indeed be called an "important difference;" but it can by no means be fairly said, on that account, to alter the specific character of the disease, wherever it may prevail. The fatality resulting from dysentery, as it occurs at Dinapoor, is very much greater than the fatality attending dysentery as it is observed in Dublin; yet it would scarcely be logical to argue that the dysentery of the Irish Capital and of the Bengal Station is not specifically one and the same disease. During the year 1866, in the Jail Hospital at Chyebassa, the fatality of cholera amounted to 368·42 per 1,000 of average strength, whilst, during the same year, the mortality from cholera in the prison at Sooree was only 2·68 per 1,000; but who would for a moment dream of saying that, because the fatality was comparatively so very high at Chyebassa, it was caused by a cholera specifically different from that observed at Sooree? If comparative fatality is in any way to regulate the nomenclature of disease, the appellations accepted in medicine to-day might at any time reasonably be altered, *ad infinitum*, according to geographical position, season, temperature, and the like. It is further to be observed that the complication of *jaundice* is very generally met with in the relapsing fever of our jails, whilst it was present in a much smaller proportion of cases in the epidemics of Europe; and that, in 1843, Cormack, Craigie, and Alison considered *this complication as characteristic of the most malignant cases.* The excessive mortality that occurred at Lahore, Mooltan, and other places can also, to a great degree, be accounted for by collateral circumstances. We know that in the Central Prison at Lahore, immediately before the outbreak of relapsing fever, a very severe type of malarious fever had been prevailing, which had the general effect of greatly weakening the prisoners, and of rendering them obnoxious to attacks of any subsequent disease. Again, we have it on the authority of the Inspector General of Prisons of the Punjab that when this fever was about to appear at Mooltan, the jail there was (to use the exact words of Dr. Dallas) "ripe for the spread of epidemic disease; and it is quite a question for argument whether it was not in a condition to *generate an epidemic* as suggested by Dr. De Renzy."

I shall a little further on give a true picture of the Mooltan jail as it then existed. This may prove an instructive sketch, in relation to those conditions under which hundreds of prisoners laboured, who, not once, but frequently, have been described by Jail Superintendents as succumbing to relapsing fever, with the following words almost on their lips:—"*Bhookha, bhookha; bhook lagta, sahib,*"—*I am hungry now.*

(To be continued.)

ON THE PATHOLOGY OF HEPATIC ABSCESS, RESULTING FROM DYSENTERY.

By John F. Foster,

Assistant Surgeon, 30th Regiment.

In applying the theory of thrombosis to the production, through the medium of the portal system, of liver-abscess, the first point that strikes one is the anatomical peculiarities of the hepatic circulation, which render any arguments by analogy to other parts totally inadmissible. All other secreting or excreting glands are at once nourished by, and draw their secretions from, the same system of vessels, but the liver possesses two sets of vessels conveying different qualities of blood,—the arterial for its nourishment alone, and the venous for its proper functional manipulation.

These two supplies unite in the capillary plexus surrounding the lobules, which consequently receive their blood from both artery and vein. "The precise mode in which the blood is poured into the veins (from the artery) has been a subject of great dispute, but I have many preparations which show that the blood is poured into the portal capillaries near the circumference of the lobule, as Kiernan long ago inferred, and not into those near the centre."*

If the circulation through the portal vein be arrested, the organ is in this condition: its *nourishment* is unimpaired, but its *function* is entirely suspended; and with this state analogies can readily be found in almost any portion of the body. Now, what is the result to a muscle if this state of things exists? It becomes *atrophied*, but never suppurates. Tie the *vas deferens*, and the testicle will rapidly dwindle away to a small and useless mass. Occlusion of a ureter produces atrophy of the kidney from which it arises. By analogy, therefore, the liver should become atrophied, but should *not suppurate*, and this is found to be the case.

Dr. Budd gives an instance in which the main trunk of the portal vein was occluded. Death did not occur for one month, and was caused by the constant intestinal hæmorrhage. The liver was then only the size of "two fists," and quite free from abscesses. Several other cases of a similar nature are recorded. In the same way, if branches of the vein are obliterated, the parts supplied by them become atrophied. Three such cases are given by Dr. Budd, † who remarks upon them: "It appears then that obliteration of branches of the portal vein causes *complete atrophy* of those parts of the liver which the obstructed branches supplied."

In cirrhosis, the effused lymph "in contracting compresses the portal veins, and impedes the passage of the blood to the secreting substance of the liver, diminishing its vascularity, and consequently its bulk. Many small branches of the portal vein it entirely obliterates, *and by so doing causes complete atrophy of the portions of the liver which these branches supplied.*" ‡ But "abscesses are never found in the *hob-nail* livers of the gin-drinking population of our large towns."§

It is therefore evident that a thrombus cannot produce an abscess in the liver by simply arresting the portal circulation through any number of its lobules. If embolism does cause suppuration, it must be by some other means, that is to say, the embolus must contain within itself septic or pus-producing properties. But if so, the abscess would originate at the point at which the vein was occluded. This is not the case: the small purulent depôts, consequent upon dysenteric ulceration of the bowels, when seen at an early stage of their development, are found to originate in the capillary plexus *within the lobules*,—a position which it would be utterly impossible for any clot to reach. For it must be remembered that peripheral venous thrombi, while travelling from small into larger vessels, will increase in size by the adhesion of other blood corpuscles; and when the channel becomes again narrowed, as in the portal veins, without the intervention of the disturbing power of the muscular cavities of the heart, (which, by causing a sudden rush of the

* Beale on the "Microscope in its application to Practical Medicine," 2nd Ed., p. 295.

† Budd's "Diseases of the Liver," 3rd Ed., p. 182.

‡ Ditto ditto, ditto, p. 144.

§ Ditto ditto, ditto, p. 196.

gested, or degenerates into septic material capable of exciting

by the restored circulation, there still remains the objection that

the liver; and experience proves that this does not occur.

power of causing instantaneous coagulation of the blood in its

ready to admit that an abscess will probably occur as the

derived from tissues more directly exposed to observation, I

suppurative disintegration of the surrounding tissues. But at

prove that embolism of the *vena portæ* will lead to a similar result.

There are two cases quoted by Dr. Budd† which I shall now contrast. He gives them both as phlebitis, but there is such an important difference in the manner in which the pus gets inside the veins, that I need not apologise for commenting upon them.

In the first, recorded with much minuteness by M. Lambron

wall of the stomach and the head of the pancreas, and pierced the main trunk of the superior mesenteric vein, causing phlebitis, which extended into the liver, and led to the formation of pus within the veins, but did not give rise to hepatic abscess.

mesenteric gland suppurated and discharged its contents into the vena portæ by ulcerating through its coats; and this was immediately followed by diffuse multiple abscesses of the liver.

tions in the portal vein, which occupied a much larger space than could be fairly attributed to the pressure or influence of the diseased gland.

I extract the following from M. Lambron's remarks:—

M.

The points to be observed, and the deductions to be drawn from these cases, bear out, in a forcible manner, the views I have expressed in former papers. We see phlebitis with thrombi in

* Archiv. [illegible] and Pharmacie de Montpellier, 2nd Ed., Vol. II, p. 667.

† Op. Cit., pp. 173 & 174.

M.

continue to spread upon the internal coat of the vessel, and will, of course, evolve pus-cells while so spreading; yet the presence of these ulcerations does not produce a thrombus, or even a false

dysentery may extend within the vessels until they reach beyond the clots formed to stop the hæmorrhage, and are in actual contact with the circulating blood.

lobules when the portal circulation through them is arrested.

they only receive the blood supplied to them by the hepatic artery. But when pus-corpuscles get into their capillaries, the intra-lobular veins appear "empty of blood;" for then the entire circulation is cut off, and the nucleus of an abscess is laid down.

Pus-cells cannot pass the intra-lobular capillaries of the liver, as the latter are of very small calibre, rather less than 1-2500th of an inch in diameter. Blood-discs are 3-4000th of an inch in their flat diameter, so that they can only pass in single file. The measurement of a pus-corpuscle is fully 1-2500th of an inch; it would consequently fit tightly into a capillary, and be impacted within it.

M. Lambron's case. Certainly, the phlebitis had just reached the suppurative stage, and abscesses would have followed; but they would have come next in the lobules that contained pus,

is between phlebitis and thrombosis ends, because suppuration is but a further stage of the inflammatory action when in this

in any remote part to which it may be conveyed.

Dr. Budd wrote under the belief that phlebitis was a frequent result of dysentery, and that the pus formed during the disease was carried away to the liver, and there deposited. "When pus is formed in one of the veins that feed the vena portæ, it

lobular substance, and abscesses will be found in the liver only."*

cited in explanation of the different morbid phenomena that were then recognised under the one term "*pyæmia*." It was also held that the veins possessed the power of absorbing pus, either by their open mouths, in the case of wounds, or by a species of transudation or endosmosis, when their walls were intact.

The recent investigations of continental pathologists have, however, overthrown these doctrines, and substituted others, which are as remarkable for their hypothetical nature, and the big-worded phraseology in which they are expressed, as for the subtle and ingenious manner in which their arguments and experiments are conducted.

[illegible]

"

and

* Op. Cit., p. 79.

fusion. In these days a man's opinions are not permitted to remain [illegible]: the teaching of one year is antiquated within a decade; and if one wishes to make or retain his professional reputation, he must either follow the rapid stream of novelty, or cut an equally new channel for himself.

While I acknowledge, then, the general correctness of these theories, I have wished to deny their applicability to the causation of hepatic abscess as connected with dysentery, and by so doing I have imposed upon myself the task of finding some new and plausible explanation of their occurrence.

This is a point which I have had so much diffidence in approaching, that my previous writings have doubtless led to the idea that I entertained the old opinions with regard to the pathology of pyæmia. And herein lies my quandary—Which is better—to remain under the imputation of holding obsolete notions, or to advance a new hypothesis that may possibly be disproved or rejected as improbable? I have hesitated, but am now resolved to adopt the latter course, although my views are at present crude, and unsupported by any direct proof.

The "pustular form of dysentery" has been described by Murray, who believed that papules, afterwards becoming pustules, formed on the inner coat of the bowel. Whether he is right in supposing this to be an eruptive disease, I will not stop to enquire, as it is foreign to my subject. I believe that he is wrong; but I wish to draw attention to the fact of his having described the existence of collections of pus *beneath* the mucous membrane.

"After the formation of sub-mucous abscess" is an expression used by Dr. Aitken* when he describes the various causes that lead to dysenteric ulceration; and, further on, he remarks that "the colon presents prominent little masses about the size of a pea, which burst readily on pressure, and give forth fluid contents like pus." This form of lesion is especially notable in Indian dysentery, and it is with Indian dysentery that hepatic complications are most frequently observed.

I believe, therefore, that there are at least two methods by which pus-corpuscles may be readily conveyed into the circulation —

Firstly, by the extension of ulceration upon the inner coat of the veins; and,

Secondly, and perhaps more commonly, by [illegible] when the small veins beneath them become corroded by disease.

In support of the second assertion, which will probably appear startling, I rely upon two facts constantly observed in the dead-house—so-called sub-mucous ulceration, and sub-mucous hæmorrhage.

The sub-mucous ulceration begins in the solitary glands, which are often enlarged to the size of split peas, and contain pus-cells.

The sub-mucous hæmorrhage proves that veins are opened before the inner surface of the bowel is destroyed.

If a vein is opened within a distended solitary gland, the elasticity of the walls of the gland, which is really a minute abscess, will have greater power at first than the flow of the blood, and its contents will consequently enter the vein, instead of the blood entering it. After the distension is relieved, the ordinary hæmorrhage will occur; but by that time the mischief will have been done. It will be very difficult to demonstrate this, perhaps impossible; but if I can do so, I will make it the subject of another communication.

And now, having expounded my *hypothesis*, this paper may fitly be brought to a conclusion.

* Aitken on the "Science and Practice of Medicine," 2nd Ed., Vol. I, p. 602.

ON A NEW CLASS AND DEMONSTRATING MICROSCOPE.

By Henry Lawson, M.D., M.R.C.P.E.,
Professor of Histology in St. Mary's Hospital, London.

The microscope whose two forms are represented in figures 1 and 2 is one which has recently been constructed, at my suggestion, by Mr. Charles Collins, the Optician of Great Tichfield Street; and I may, I think, be found useful by those engaged in teaching microscopic anatomy. The old method of lecturing upon diagrams, and exhibiting specimens under the microscope after lecture, has these two serious objections: 1*st*, a large number of microscopes must be employed; and, 2*ndly*, the students, in clustering round the instrument, push and jostle each other, and thus earnest workers, anxious to observe, are prevented giving the necessary attention to the object under observation by the idle "black sheep" which, unfortunately, every class possesses. I find it necessary, therefore, to hand the microscope during lecture to the student nearest to me, who in his turn passes it to his neighbour, and thus, while I am describing a particular tissue, the students are enabled to follow the account which I give



Fig. 1.

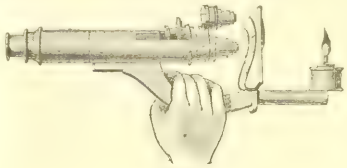


Fig. 2

them. I find that, on the average, I exhibit eight or nine specimens in each lecture, and therefore the system of using hand microscopes seems to me to work very well, and to result in driving ideas into a greater number of heads than could be done on the old plan. This [illegible] by [illegible] as far as I am concerned. It was [illegible] years since, and with success, by De Lionel Beale. What I wish to convey to your readers is that I have devised a method by which the ordinary microscopes, which are employed in actual work in a medical school, may be easily converted into demonstrating microscopes. The instrument figured above may therefore fairly be styled a "convertible microscope." In figure 1 it is seen as used in research, and in figure 2 as employed in demonstrating to a class. Its peculiarity is this—the leg of the instrument, the part intervening between the stage and the solid circular foot, is really double, being composed of a solid brass stem which slides within a tube. This tube is fixed by a knuckle-joint to the circular foot, and carries the mirror. When the microscope is [illegible] for demonstrative purposes, it is simply drawn out from the tube, thus leaving the foot and mirror behind, and a tube bearing a small lamp filled with colza oil is slid over the leg. The microscope then has the form represented in figure 2. This instrument is supplied with two good objectives—an inch and a quarter inch, which are fixed in a double nose-piece; its coarse adjustment is telescopic, the fine adjustment being regulated by the usual screw. In this form, with plain stage and single eye-piece, it is sold by Mr. Collins at the extremely moderate price of four pounds ten shillings, and is, I think it will be admitted

by those who engage it, the cheapest remedy yet made. Here is a thing which is as simple as it is surprising. It does not shock, and it is provided with but a single caution; that is, to avoid the use of whatever may be used with advantage by the sanitary agents, as above, may be taken as a fair indication of the amount of disease to be met. We have several of these in use at St. Mary's. When not employed in the wards, they are kept in the Room No. 1, and are then used by the students in the Histological Laboratory.

ON THE DILUTION OF VACCINE LYMPH WITH GLYCERINE, AND THE MULTIPLICATION AND PRESERVATION OF THE VIRUS THEREBY

By Robert Harris, M.B.
Assistant Surgeon, Bengal Army.

Many [illegible] dwellings the fitting nidus in which it multiplies itself a [illegible]. [illegible] the centres of the severest [illegible], upon the [illegible]. There have [illegible] which have [illegible] Thousands have died before it. The memory of such visitations does not readily grow dim, and there is probably no disease, (cholera is a doubtful exception,) of which there is a greater dread in India.

Such being the case, it may appear matter of surprise that any difficulty should be made about the reception of vaccination; nor is it likely that there would be, were the people thoroughly convinced of its prophylactic power. The superstitious reverence of "Sitla," the deference to old custom, the dislike of innovation, the vested rights of ignorant and interested inoculators, and all other causes which now impede the work, would yield at once, especially during the prevalence of small-pox, if the people only actively believed, instead of passively ignoring, as [illegible] have an almost unfailing remedy against their enemy, and one which, when it does not actually prevent, never fails to rob it of half its dangers and terrors. It is encouraging to know, as is shown year by year in the various vaccination reports, that old [illegible] prophylactic becoming more generally known and believed in; but much passive resistance is still met with, and there is as yet [illegible] by which its benefits may be secured to all, that, namely, [illegible] of Government, which, at most, can afford protection to only a [illegible] of India. It would be an interesting and somewhat delicate inquiry to discover to what extent and in what precise manner each of the opposing causes mentioned above has acted, and whether there may not be [illegible] doubtful and unsuccessful operations are not a fruitful source of distrust. The average ryot or bunniah makes little distinction [illegible] pock. An operation has been performed, this much he knows. [illegible] ever had any) in the protective power of vaccination, his belief in the statement made to him by the operator, receive a rude shock from which they may never recover, and which he is not [illegible]. [illegible] people, and [illegible]

[illegible] It must be borne in mind that every doubtful or unsuccessful case upon which small-pox supervenes, tends to a directly opposite result. [illegible] mentioned, that the vaccinating of any but a very small propor- [illegible] Government, it follows that the main object to be aimed at is not so much large numbers of operations as a high percentage [illegible] *minimum*. What the attainable standard may be in the plains [illegible] the latest and most experienced authorities on the subject, Mr. [illegible] success in his attempts to vaccinate above one in 150 times."* It is not likely that such a standard will soon be reached in India, even in the hills. The frequent failures at the beginning and end of each season from atmospheric causes, the substitution in many cases of crusts for fresh lymph, the ignorance and carelessness of parents in allowing the vesicles to be rubbed and destroyed, the prevalence of skin diseases, the practice of applying drugs to the arms of those operated on, and occasionally the inexperience of the vaccinators themselves, or their operating on children who have previously been vaccinated, or had small-pox, from a desire to increase their returns, combine to swell the number of failures, and prevent a very high standard from being reached. There can be no reasonable doubt, however, that the *maximum* of success has not yet been attained; and as every suggestion which can contribute to increase it, or to render the practice of vaccination [illegible] to the profession some remarks on the subject which forms the [illegible]

The idea of applying the well-known solvent and antiseptic properties of glycerine to the preservation of lymph is no new one. Several years ago Dr. Stille, of Philadelphia, in his "Elements of Materia Medica and Therapeutics," quotes the authority of a writer in, I think, the "*American Journal of* [illegible] to the following effect. That not only may the fresh virus eight days old be multiplied and preserved for use, but that the scales formed by the pustules may be so by means [illegible]. More recently the subject has been taken up by M. Muller, Director of the Vaccine Institute of Berlin, and by Dr. Kipp, of Unna. The results of their observations may be found in the *Medical Times and Gazette*,‡ and are briefly as follows.

By diluting the vaccine virus with a mixture of glycerine and distilled water, the lymph is increased in quantity, while its tendency to degeneration is prevented. The vesicles produced by the diluted virus are as large and as perfect, run the same course, and yield as much lymph as when the operations are performed with the purest matter. The vaccinating material may be multiplied ten or twenty-fold without deterioration, thus enabling a large number of persons to be vaccinated on an emergency, when only a small quantity of the pure lymph may be available. The mode of procedure is very simple. The lymph from a vesicle or vesicles eight days old is collected on a camel's hair pencil, or between glasses, and is then mixed with a solution containing equal parts of glycerine and distilled water, after which it is ready for use, or to be stored between glasses or in [illegible] the lymph

* [illegible] Vol. XXXVI.
† [illegible] and that [illegible]
‡ [illegible] and 19th September, 1868, pp. 255-6.

be intended for preservation. The diluted lymph, from its lessened viscidity, flows into the tubes more readily than the natural virus, and there is less chance of admixture with air, while that stored between glasses, instead of drying up in a few hours as does lymph collected in the ordinary way, and requiring to be moistened or mixed with water before it can be used, retains its fluidity unimpaired for months, thus saving much trouble and delay. This mode of storing the lymph between glass slips is that favoured by Dr. Kipp, who says that "it has been preserved for four months in a room, and yet proved quite as efficacious in producing pustules as natural lymph."* When fresh lymph is not available, a solution of the crusts in glycerine is found to answer well. This plan seems to be employed to some extent in America, where vaccination from the crust is much more common than in Europe. If crusts are to be used at all, it is a great improvement on the common plan of powdering a crust [illegible] and mixing it with water,—a proceeding that has to be continually renewed, and which is both dirty and troublesome. I have myself found a solution of fresh crusts, stored in a small stoppered bottle, to answer fairly well during the present season. It has not succeeded indeed in every instance, and will not bear comparison with fresh lymph, either pure or diluted, but it is quite as successful as the crusts alone, and has the advantage of them in cleanliness and facility of application.

It will be seen from the above summary that the practice has several advantages to recommend it to the notice of Indian Surgeons. One of the most manifest of these is the power of [illegible] alone operations can be successfully carried on in the plains, and where large numbers of operators have to be supplied within a few days of each other. Plentiful as are the supplies furnished by the establishments in the hills, there are probably many men who have experienced the inconvenience of an insufficiency of lymph at the commencement of the season. In the state of Bhurtpoor much valuable time was lost in November, 1866, owing to the failure of the first supplies, as ten or twelve days necessarily elapsed before more could be obtained, and a further delay ensued before that was sufficiently multiplied to start the work fairly at the ten centres from which operations were carried on. The same very nearly happened this season. A number of tubes and points received early in October from the National Vaccine Institution, as well as some crusts from the Superintendent of Rajpootana Dispensaries at Mount Aboo, failed in every instance from being used too early. Further supplies, chiefly crusts, received later in the month produced unsatisfactory results; [illegible] warranted their return as "successful," they were neither so [illegible]. I received seven tubes from England. Three of these were used successfully in the ordinary way, three children being vaccinated. The contents of the remaining four were mixed in [illegible] material for the vaccination of twenty-three children. Twenty-one of these cases were successful; in the other two the vesicles were [illegible]. [illegible] large and full, with well-marked areolæ; and with lymph or crusts from them almost all the subsequent operations have been conducted. On two subsequent occasions I have repeated the [illegible] May, 1866, it is stated that "the results have been found uncertain when diluted more than twenty times. Diluted only ten times, they are always certain." This must, I believe, be received with some reservation as regards India. It is difficult to measure the exact amount of the dilution; but it has seemed to me, from a good many experiments with different strengths of diluted lymph, that the amount of the diluent added should not exceed the quantity of lymph in a greater proportion than five to one. This refers chiefly, however, to lymph stored in tubes received from England, and at least two months old. With perfectly fresh lymph, a further dilution might very likely succeed, but I have not as yet been able to fill tubes with fresh lymph from the arm, as no facilities for doing so exist in bazaars and bylanes of native towns and villages. Latterly, too, I have almost abandoned the use of tubes, owing to objection having been taken to my emptying them by blowing through them. I now use glass slips, about an inch square, in the manner recommended by Dr. Kipp. Having punctured a selected vesicle, a small quantity of the lymph which exudes is taken off by lightly touching it with one of the glasses. A drop or two of the diluted glycerine is then added, and mixture effected by rubbing the glasses together for a few seconds. Lymph thus prepared will keep quite fresh and good for a long time. I have some seven weeks old which succeeded perfectly in a case vaccinated with it on the 4th instant, and is still to all appearance quite good. The glasses separate readily by sliding one over the other, and retain sufficient matter between them to vaccinate two or three children. This mode of collecting the virus seems to me to have many advantages over most others. It cannot compete with arm-to-arm vaccination; but when this is impossible, or when lymph has to be carried or sent to a distance, it is cleaner, more certain, and keeps fresh longer than crusts; and there is no difficulty in preparing it, as there often is in filling tubes; while it is quite free from all objection on the score of caste.

How long the virus thus prepared will retain its activity, I am not yet in a position to say; but, looking to the acknowledged preservative powers of glycerine, and to the fact that Dr. Kipp found it to produce perfect vesicles after it had been kept four months in a heated room, I have every hope that it will be found fresh and good after a long period. It would perhaps be too much to expect that it should be able to survive an Indian summer; but I purpose trying whether it cannot be preserved in ice, and made available at the beginning of next season. I have, I confess, but small hopes of success, but the experiment is worth trying, as, should it succeed, an unlimited supply of lymph will hereafter always be available for the starting of vaccine operations. It is needless, however, to speculate further on what at present is purely hypothetical.

The fact remains that, though it may fail in serving the purpose just indicated, the glycerinated lymph, as stored [illegible] supplies of matter have to be sent to a distance. Crusts have hitherto been trusted to almost exclusively in this state, and have, I believe, mainly contributed to the prevention of a high standard of success. Last season only 72·71 per cent. were successful. For the three months ending 31st December last, the average was 79·80, while for December alone it reached [illegible] (taken off on ivory points, and used either next morning or within a day or two) for crusts, and goes far to show that the [illegible] confidence which is reposed in them, if any efficient substitute can be procured. Such a substitute will, I believe, be found in [illegible] been almost uniformly successful; and although I have not as [illegible] with [illegible]

* *Medical Times and Gazette*, November 3, 1866, p. 482. *American Journal of the Medical Sciences*, April, 1867, p. 425.

points owing to the glycerine preventing them from drying.

I have merely pointed out the applicability of the plan to India,

3.—A saving of a considerable amount of time and trouble.

(very considerably ?) longer than it can be kept without such dilution.

the eighth day, the necessity of another visit to collect the

4 greater percentage of success, than in vaccinating from crusts.

extended and more systematic investigation than I have as yet given them. My apology for bringing the subject to the notice of the profession thus incomplete must be that I do so in the hope that, during the portion of the present season which yet remains, the matter may be taken up and experimented upon by some observer. I think that some experiments may be made with as good a view to the question of the glycerine-vaccine lymph preserved under any circumstances through the hot weather.

Indian Annals Medical Science, February 15th, 1868.

CASES FROM PRACTICE.

SUSPECTED CRIMINAL POISONING BY DHATOORA IN THE PERSON OF A EUROPEAN. RECOVERY.

By DAVID E. SMITH, M.D.,

In Medical Charge of Mr. ——.

The following are notes of a case of supposed poisoning, the circumstances of which may prove instructive. The subject of the record is a Mr. ——, aged 42, a European of middle stature, and rather stout in figure.

When the case was under Police investigation, the Magistrate handed me to furnish him with some report of what I knew about the matter, in order to further, as much as possible, the object of the said investigation. The following is what I submitted :—

MEMO.

I know Mr. —— in 18[illegible], and I have seen him continually during the past eight months. I believe him to be a man of very regular and temperate habits. For years he has been subject to bilious attacks, and he informed me that it was on the occasion of his coming to the Hills from Bengal two years ago. He suffers from what is technically called "biliousness" or "disordered stomach," in connection with varying functional derangements of the digestive system, especially on want of

On the 4th November I [illegible] Mr. ——, but still suspected nothing.

On the 5th of November I wrote a letter to Mr ——, asking [illegible] down notes of his case, and furnish him with a general statement of it for future reference. He came accordingly; and whilst he was with me, I wrote the said notes, which are now before me in original. From these, the following is a *verbatim* extract :—

"Wednesday, 4th November, 1868. Got up at usual hour in morning with a sensation of extra-ordinary weakness, and a sense of vomiting coming on. In trying to reach his clothes, which were on a chair close by, felt a [illegible] going to bathe, felt himself swaying from side to side. Lower limbs and arms felt perfectly powerless, and also the tongue. Could [illegible] Nausea [illegible] Could see large objects, but not small ones, such as letters. Could neither see to write [illegible] Any one [illegible] seemed to have a wave [illegible] Pulse was ruby to the eyeballs."

From the same notes I find the following :—

"[illegible] but complains of dryness of mouth and throat."

On the evening of 6th November I received a note from Mrs. ——, asking me to come over [illegible] husband. I was at dinner at the time, and had guests at my table. I therefore wrote to Mr O'K——, desiring him again to go and see Mr. —— (the distance was short), and let me know at once how he was. [illegible] I have [illegible] Mr O'K——'s note; but in it he told me, in general terms, how Mr. —— was when he went there; and he added that he left it to me to go and see him or not, as I should see fit after hearing his report. I determined to go and see Mr. —— at [illegible] o'clock, before going to bed. Meanwhile, before my guests left me, I received an urgent verbal message from Mrs. —— informing me that Mr. —— was [illegible], and requesting me to come over without delay. I ordered my horse, and went as quickly as I could. On arrival at the house, I found Mrs. —— and Mr. —— in the verandah. Mrs. —— stepped forward and said "Mr. —— is asleep now." I was annoyed at this remark, and asked Mrs. —— how she could think of treating me in so unceremonious a manner. She said she could not help his going to sleep, and added :—"I hope, at any rate, you will come in and see him, Doctor." I hesitated, and at first declined to do so, but afterwards, at her request, I went inside and found Mr. —— lying on a sofa, with some bedding over him. Mrs. —— roused him, and told him that the Doctor had come to see him. His pulse was then steady, and he answered some questions which I put to him. I did not consider him in any danger, and accordingly left him at once. I now remember that his pupils were at that time broadly dilated, and he was extremely drowsy. Still I had no suspicion of his having been [illegible] dealt with.

On the following morning, *i. e.*, the morning of the 7th November, about 9 o'clock, I received a note from Mr. ——, which, having answered, I partially tore up and threw it into my waste-paper basket. This note was afterwards recovered, and [illegible] now submitted, in original, in its torn condition.* It appears to me, *now*, that this letter is very valuable in the way of evidence,

* Sent to the Magistrate.

although I did not realize its importance in this respect when first I received it.

When the said note came to me, I was just preparing to go out and make some rather urgent professional visits. My diary shows that I did then go out, and that I paid five visits. On my return I found Mr. —— at my house, awaiting my return. He told me that Mr. —— had apparently lost his senses, and that he was wandering about in an unaccountable manner. I shortly went to see him, and found him in a very peculiar state. His face was somewhat purple in colour; the eyes were bright; the pupils were greatly dilated, and insensible to the action of light. His pulse was tolerably natural, as regards frequency and strength. He wandered about in a confused state, raising his eyebrows, rubbing his hands, and complaining of cold and numbness down the right side of his body. He went from room to room, and showed an inclination to wander outside. His daughter led him about, and prevented his going out of doors. In attempting to converse with me, he spoke incoherent nonsense. Looking out of the window, he suddenly remarked, with a pleased but startled expression, "See, Doctor, there is *snow* on the ground." I said "Oh no, Mr. ——, there is no snow there, it is sunlight you see." On which he replied with an air of confusion and disappointment, "Oh! sunlight, is it?" I thought it was snow;" and immediately he rambled incoherently regarding other matters.

I went to an adjoining room to write a prescription for him, and to do so, I sat down at his writing table. He tried to follow me from the room where I had left him. I went up to him and said "Don't you come out of that room; it is too cold for you here." I thus hoped to induce him to keep quietly where he was; but almost immediately he re-appeared, led by his daughter; and he came up to the writing table where I was seated, and began touching various objects without any definite object. He looked towards the pigeon-holes above the writing table, where he had put the papers; he fumbled in the direction of them, but took nothing out of them. His gait was peculiar, and he walked in a sort of stealthy manner, mumbling to himself. He appeared in a feeble and pitiable state. He was not the least violent.

I was considerably perplexed at his condition, and I now, for the first time, began to think there was something very peculiar indeed about him. Still I had no reason to suspect *foul play*; and whilst I felt that I did not comprehend his case, I was afraid that, from one cause or another, his symptoms might be premonitory of a paralytic attack. I accordingly came home and gave Mr. O'K directions to go again in the evening and apply a blister to the nape of the neck, and to give a pill containing 1/4th of a grain of strychnia three times a day.

I ought here to mention that now it was that my suspicions began, *very readily* to be aroused. Mr. ——, when he was with me on the morning of the 5th instant, had told me that Mrs. —— and he did *not live amicably together*; that he desired to be legally separated from her, but that he could not effect his wish in this respect; that he felt sure a sea voyage would cure him of his dyspeptic attacks, but that he could not go away and entrust Mrs. —— with the care of his children, and that this it was that caused him excessive mental anxiety which greatly aggravated, if it did not produce, his attacks of dyspepsia and depression.*

On my return from seeing Mr. —— on the 7th instant, I recovered his note from my waste-paper basket, and I thought anxiously over it.

As I returned from seeing Mr —— that day (the 7th), I met Major ——, who asked me what was the matter with Mr. ——. I at first somewhat evaded the question. Major —— said, "Is it a sunstroke he is suffering from?" I replied, still trying to be somewhat evasive, "Yes, something of that sort." He (Major ——), then probably detecting from my manner that I did not altogether mean what I said, explained to me that he took a friendly interest in Mr. ——, and that one of Mr. ——'s servants had just been telling him. Major ——, that he suspected Mr. —— had had some poison administered to him.

I then at once told Major —— that, under the circumstances, I was much obliged to him for mentioning the fact to me; that I did consider Mr. ——'s symptoms very peculiar; and that if any poison had been administered to him, it was probably *ahatoora*.

The following day, November 8th, I again went to see Mr. ——, and found him lying on a couch perfectly sensible, but weak, and still somewhat confused and unlike himself. I then prescribed a mixture to act on the kidneys, and directed that the strychnia pills should be discontinued.

On Sunday, the 10th, I received the note marked No. 2 from Mr. ——, in which he still complained of "dryness of the mouth and throat."

This note is herewith forwarded, in original. On the 12th November, Mr —— came to my house and talked the whole matter over. He then for the first time told me that he felt convinced he must have been poisoned. He stated that he believed there were four occasions on which he had reason to suspect that poison had been administered to him. He could not recall dates. But coupling his somewhat vague recollections of facts with notes in my diary regarding my visits to his house, I inferred that the first occasion was on the evening of the 1st November, in his tea; the 2nd on the evening of the 6th, in his soup; the 3rd on the morning of the 7th, in his cocoa; and the 4th occasion he was not so certain about. On Sunday, the 10th, however, he still experienced dryness of the mouth and throat, and otherwise felt peculiar sensations; but he stated that he could not be sure that on that day poison was administered to him. He said he thought it possible that his sensations then experienced were merely the after-effects of previous doses of poison.

Mr. —— told me that the tea and cocoa (which he drank on the evening of 1st, and the morning of the 7th respectively) had "*a heavy muddy flavour, like that of burnt meal*," and that he noticed it and complained of this at the time.

He said that the soup he took on the evening of the 6th) "*had a distinctly bitter taste*;" and that he also remarked this and complained of it at the time.

He told me that, shortly after taking both the soup (on the 6th) and the cocoa (on the morning of the 7th), he lost all recollection of what happened around him. Meanwhile, however, he experienced a feeling of intoxication and giddiness, difficulty in swallowing, a confusion of ideas, a coldness and numbness of the surface, a pricking sensation in the nose, and an irresistible inclination to rub the nose violently. He had also convulsive twitching of the legs after taking the soup. He had no fever and no vomiting, but considerable drowsiness.

When I saw him his most suspicious symptoms were dryness of the tongue and throat; frequent coughing; attempts to hawk and spit; widely dilated pupils, insensible to light; indistinctness of vision; seeing imaginary objects (such as snow on the ground); haziness and confusion of objects, as if everything were badly focused; a sensation as if smoke or fog were rising around him; purple colour of face; puffiness under eyelids; cold surface; feeble, staggering gait; restlessness; inclination to roam from room to room, and to wander out of doors, as if in search of something.

The moment he touched any object, he at once went off in the same unaccountable manner towards some other object at a distance. Whilst he did this, he was mumbling to himself; and as he was supported and led about by his daughter, he looked the picture of feeble, nervous agitation.

After recovering himself to a certain degree, he still evinced a partially incoherent mental state; his vision still continued indistinct; the eyes were bright and glistening, and the pupils continued to be widely dilated. He also experienced a sense of very considerable exhaustion; walked about feebly; and was altogether sadly unlike himself, &c., &c.

Remarks.

I think few will doubt, after reading the above, that Mr. —— was powerfully under the influence of *dhatoora*, and that he had a very narrow escape. The case is interesting, as occurring in the person of a European. Most of us in India have seen many Natives in such a condition; but it is unfortunately otherwise as regards our own countrymen. It is to be remarked that my suspicions might possibly have been aroused earlier, but that my patient was subject to nervous dyspepsia. Would know what Rotaean forms this occasionally assumes. Again, my patient was a man of quiet and good disposition; kind to his servants and household; so that on this score there was, *à priori*, no reason to suspect that any of these around him were likely to be plotting against his life. Taking it for granted that an excessive quantity of *dhatoora* was administered in this case, it is not easy to determine with what specific object it was given; whether to kill at once, or to effect the same end by slow poisoning, or whether it was simply intended, by degrees, to stupefy and weaken the intellect. It is to be observed that the Natives do believe in the possibility of rendering a person tremens by such means. (Mr. —— is in possession of a good deal of valuable property.)

* This passage is published with Mr. ——'s consent.—D. B.S.

ness complained of down one side of the body, the confusion of ideas, the altered and fixed pupils, afforded, under this head,

I do not know that there is much more to be said in the way

CASE OF SEVERE LACERATION OF LEFT THUMB TREATED WITH COLD-WATER IRRIGATION.

By Assistant-Surgeon W. Collis, M.B.A.

Pte. [illegible], 70th Regiment, was admitted into Hospital, Fort William, under my charge, on the 28th January, 1868, at 10 A.M., having received the injury of which he complained about 8 A.M. the same day.

The patient stated that he was in the act of [illegible] when the gun was fired off. The parts were much lacerated and bruised, and the wound was very foul. No [illegible] occurred. The case was one for removal of the thumb, but the [illegible] result, not a single bad symptom appearing, and there being but little constitutional disturbance.

On the 3rd day after injury a portion of the wound had [illegible] thumb. From the time of the injury up to the 6th day the

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A CASE OF HAPPILY CURED ENCEPHALOID CANCER OF THE FEMUR. AMPUTATION AT THE HIP JOINT. DEATH FROM BRONCHITIS.

By Assistant-Surgeon Kenneth Mackay, M.D.,

[illegible]

Miss Cassy, an [illegible] Hindu girl, aged 24 years, was admitted into Mr. Fleming's Ward on the [illegible] January, 1868, [illegible]

[illegible] swelling on the inner aspect of his left knee, attended with some [illegible] distinct fluctuation could be felt in it; its surface was hotter [illegible] ment than the outer, and it extended some distance up the thigh. [illegible]

[illegible]

[illegible]

were easily broken off by the finger. The bone above the inner [illegible] flaps was painted with undiluted carbolic acid, and the wound [illegible] weak after the operation. On the patient recovering his consciousness, tr. opii, mxv were given.

Brandy and water was ordered to be given frequently in small [illegible] oil (℥iv of oil to ℥j of the acid).

In the evening there was slight reaction; pulse 120, stronger [illegible] declared himself to be free from pain. Opiate draught repeated at bedtime.

[illegible]

Aquæ camph. ... ℥j

[illegible]

[illegible] the stumps; very slight suppuration.

[illegible]

[illegible] superficial sloughing of the skin along the edges of the flaps. [illegible] between the flaps.

[illegible]

To be given at bedtime instead of the opiate draught.

[illegible]

[illegible] suppuration as yet.

[illegible] better, and is getting stronger. Repeat mixture every four [illegible]

[illegible] came away. The discharge has somewhat increased, but is thick and laudable. The superficial sloughs have partly separated.

[illegible] had three or four fluid feculent stools this morning; 4 ligatures came away.

Spt. ammon. arom. mixture to be continued.

[illegible]

Mist. cretæ ... ℥ss.

Ordered to be given after each stool.

16th.—Four stools in 24 hours; pulse 140; temperature [illegible]

[illegible]

[illegible] steap of adhesive plaister.

[illegible]

come away; the wound is quite healthy; slight diarrhœa continues; has got some cough; no expectoration.

19th.—Pulse 136; temperature 100°; cough rather troublesome; expectoration consists of scanty frothy mucus.

He complains of slight pain in the chest; mucus rales are audible in the larger bronchial tubes; no dullness on percussion; no dyspnœa; bowels quite regular. Omit Chalk Mixture.

℞ Vin. ipecac.	...	...	♏viiss.
Tinct. scillæ	...	...	♏viiss.
Tinct. camph. co.		...	♏xv.
Mucilaginis	...	...	℥ij.
Aquæ camph.	...	...	℥j. ft. haust.

Given every 3 hours.

21st.—Pulse 136; temperature 99°. All the sutures were removed. Repeat draughts, carbolic acid dressing, and carbolic acid lotion injection.

23rd.—Cough very troublesome; expectoration consists chiefly of thick mucus; no dullness on percussion on any part of the chest; sonorous rhonchi audible all over the chest. He has some dyspnœa; pulse 144; temperature 100; respiration 50. Repeat mixtures.

Cataplasma sinapis to the chest; to be repeated in the evening.

24th.—Pulse 124; temperature 100° 5′; respiration 48; dyspnœa and cough continue; appetite indifferent. He is becoming weaker; discharge from the stump not so healthy; granulations flabby.

25th.—Pulse 144; temperature 100; has a good deal of dyspnœa; respiration 50.

He had seven stools in the last 24 hours, consisting of loose feculent matter; appetite bad; stump looks very flabby. He is becoming weaker. Omit medicine.

Sinapism to the chest.

℞ Sodæ carb.	...	...	gr. v.
Vin. ipecac.	...	...	♏x.
Tinct. camph. co.	...	...	60 xv.
Tinct. catechu	...	...	♏xx.
Spt. chloroformi	...	...	♏viij.
Tinct. opii.	...	...	♏iij.
Aquæ cinnamomi	...	...	℥j. ft. haust.

To be given every 2 hours.

℞ Spt. ammon. arom.			
Spt. ætheris sulphurici		...	♏xxx.
Aquæ Camph.	...	...	℥j. ft. haust.

Every 3 hours.

26th.—Pulse very feeble and small, scarcely to be counted. The patient is not inclined to take any food, and had four stools in 24 hours; dyspnœa very troublesome; cough frequent. He sank rapidly, and died at 5 p.m.

REMARKS.

The body was taken away by the patient's father, and no *post-mortem* examination was allowed. The cause of death, however, was evidently the bronchitis and diarrhœa. The stump had all along been healthy, and doing remarkably well, until the strength of the patient began to fail, when it assumed an unhealthy aspect, owing simply to defective nutrition. The case may almost be considered a successful one, as far as the amputation was concerned; all the ligatures and sutures had come away, and death took place on the 20th day from causes unconnected with the operation. The relief afforded by the operation, and the improvement in the patient's general health for the first ten days, were very remarkable.

The limb, after removal, was sent to the College Museum, and its appearances thus described by Dr. Allen:—

"No. 5054.—The preparation consists of the thigh and knee, with a short portion of the leg. In front of the thigh is the exploratory incision made by Mr. Partridge. A perpendicular section has been made through the tumour, the internal condyle (from which it springs), and the patella, the knee being flexed. The tumour consists below of yellowish white, nearly homogeneous deposit, about the consistence of hard-boiled white of egg. Above it is much softer, is infiltrated with blood, and contains large lacunæ filled with coagula. It has been broken down in this portion, leaving a ragged cavity (which was opened by the exploratory incision) bounded inside by the dissected muscles, and outside by the enlarged and roughened bone.

"Microscopic appearances: The greater part of the mass consists of the mass showed no traces of stroma, but immense numbers of cells, mostly globular, but not unfrequently caudate, pyriform, or conjoined. The masses of germinal matter (nuclei) in all were very large, and, indeed, in many cases, constituted almost the entire cell, the surrounding formed material being distinguished with difficulty ('free nuclei'). Many of the nuclei contained nucleoli. In the upper (disintegrating) part of the tumour, oil-globules and granules accumulated, and the 'formed material of the cells was in many cases almost wholly converted into fat. The tumour was one growing very rapidly, and disintegrating equally fast. The upper portion, had it made its way through the skin, would have been a typical specimen of 'fungus hæmatodes.'"

POISONING BY LUNAR CAUSTIC.

By G. C. CHATTERJEE, M.A., M.B.,

Sub-Assistant Surgeon, Azimgunj.

As poisoning by lunar caustic is very rare, and as the following case made a wonderful recovery, I think it is worth publishing in detail.

One day in September last, I prescribed for one of my patients (an old man who had been suffering for a long time from extensive sloughing of the scrotum, which was considerably hypertrophied) a mixture of silver lotion (℥ij) for external use only. After writing the prescription, I told my patient, an ignorant old man, that the medicine which I had ordered was to be applied to his ulcer. In my prescription I had inserted the plural containing the lotion to be labelled "poison." Accordingly it was sent from the dispensary at Baloochur to my patient, but he, without enquiring any further, fancied it to be a mixture, divided it into four parts, and took one dose (containing fifteen grains of nitrate of silver) at once, and two doses more within the next two hours. Fortunately, I went to see him at that very time. As soon as I entered the room, his wife told me, in great hurry and confusion, that her husband was almost dying from the baneful effects of the medicine which I had prescribed in the morning. I examined the phial and found that only two drachms of the lotion were left in it; that is to say, forty-five grains of nitrate of silver had been swallowed by the poor old man!!! When questioned, he told me in a faint voice that he felt a sort of nauseating burning sensation in his stomach, and that he was very uneasy. His eyes were red, and he looked covered with perspiration. His pulse was accelerated, and his respiration hurried. The tongue was devoid of epithelium. His mind was quite clear, and he was unable to speak. I immediately made him swallow a large cupful of milk and a strong solution of common salt, and ordered that he should take as much milk as he could swallow. He was also given an emetic draught in the shape of tartar, as he was highly prejudiced against chloroform. Shortly after he began to vomit; thick tenacious mucus at first, and subsequently mucous casts of different forms streaked with blood. This state of things continued for about an hour, after which he felt much relieved, and the excruciating burning sensation abated somewhat. Nevertheless, I kept him swallowing as much milk as he could. The more he swallowed the more he vomited, and the greater was the relief subsequently enjoyed. About three hours after, he felt comfortable and fell asleep.

Next morning I ordered him a good saline purge to clear out the bowels, and he went on improving steadily. On the third day he had rather a sharp attack of dysentery; but it was carefully treated, and my patient made a quick recovery.

Considering the enormous dose of the poison (forty-five grains), the blackness of the patient, and the terrible state of his health from exhaustive discharges extending over a long time, the recovery was, at least to my mind, a wonderful one.

Azimgunj, 4th February, 1868.

CASE OF HORN GROWING FROM THE HUMAN CHEST.

By KENNETH MCLEOD, A.M., M.D.,

Civil Assistant Surgeon, Jessore.

GOBIND CHUNDER KAHALEE, æt 35, a stout, well-conditioned ryot, presented himself at the dispensary, on the 2nd January, 1868, with a horn growing from the skin of the chest, to the right of the sternum.



History.—He states that about a year previously he began to have pain in the right breast, which was also painful to the touch. After a few days there appeared a small pimple on the nipple, which soon increased in size, and assumed the shape of the fruit now before us. A small pedicle soon appeared, which continued to increase, and the pain in the breast became more severe. It now began to grow very rapidly, and became exceedingly painful, which prevented him from sleeping at all directions. This was accompanied with great pain at the [illegible] and in the corresponding extremity. After having had recourse to various modes of native treatment, he presented himself to me, when visiting a branch dispensary, and at my advice came [illegible]

Appearance.—[illegible] of the shape of the frustum of a cone a little above the right nipple. It is nearly two inches long, and about two and one-eighth inches in [illegible] It is of a dark colour, and is apparently composed of an agglomeration of vertical columns. It is striated externally. Its base, which is exquisitely tender, is [illegible] purely a cutaneous excrescence, not being connected with any subcutaneous tissue or structure. He has a cyst on his left brow, [illegible] of acne on some parts of his body. His general health is [illegible]

Treatment.—The base was removed on the 4th by two semi-lunar incisions. A few small arteries bled actively, but were [illegible] The edges of the wound were brought together by metallic suture, and a single longitudinal [illegible]

After-treatment.—[illegible] Part of the wound [illegible] and the remainder is granulating kindly.

The [illegible] was presented to the Museum of the Medical College, Calcutta. Dr. Colles stripped [illegible] and found that it was a purely epithelial outgrowth.

[illegible]

[illegible]

CASE OF HAIRY GROWTH IN THE SCROTUM.

By Surgeon-Major, Sir Charles Cuyler Pasteur, G.C.M.G., [illegible]

[illegible], June, 1867.

A [illegible] named [illegible], a native of Nagpore, by caste [illegible], has a [illegible] on the right side of the scrotum. The [illegible] was present at birth, and [illegible] Some time subsequently, an inflammation of the [illegible] The [illegible] and [illegible] and suppurating. After the [illegible] was [illegible] and [illegible] [illegible] [illegible]

stance. At the lower part the wall was rather thick, and it was there (a finger's breadth from the thinned parietes) that the canula had entered, but had not reached the cavity of the abscess, which was therefore not emptied. There was no peritonitis, and not a drop of blood in the abdomen. The great omentum was just adherent to the margin of the puncture.

REMARKS

This instance of a case of liver abscess, the only one in the course of five long years in the city of Nagpoor, is worth recording; for, considering its topography, it must be inferred that Nagpoor bears a greater immunity from such hepatic derangements than most places situated in the torrid zone. True it is that a hot climate brings on torpidity of the liver, and add to this a sedentary habit, highly-spiced food, and the use of alcoholic drinks, and you complete the etiology of hepatic affections. When the liver is thus overworked with alcoholic stimulants, and its tissues barely nourished, it is not surprising that a slight inflammation should pass on to disintegration and suppuration of the organ. It is one to ten, therefore, that, in case of hepatic abscess, you find your patient a sober and temperate man.

In a paper read before the recent Medical Congress by Dr. Ramirey, it is stated by him that puncture of the hepatic parenchyma is quite innocuous. This opinion is criticized in your November number by your Paris correspondent (No. 1), who asserts that these punctures are so serious that they are rarely practised; and in illustration he quotes one case on record of a lad whose liver was thus punctured, and who died. I may quote here my case to show that, as far as the puncture was concerned, no mischief resulted beyond a slight hæmorrhage.

The existence of such a large superficial abscess, without a corresponding degree of inflammation sufficient to cause adhesion in the surrounding parts, is also an exceptional point.

As regards treatment, I may be allowed to remark that, when the liver is thus ineffectually punctured, the best treatment to follow is to retain the canula *in situ* and to plug it up; for, should there be no adhesion in the surrounding parts, the blood from such a vascular organ will continue to flow into the peritoneal cavity unchecked, and will cause death, either primarily by internal hæmorrhage, or secondarily by extensive peritonitis; whereas plugging the canula stops the bleeding effectually, and the irritation of the instrument excites adhesive inflammation around the puncture.

Publication Received.

The Journal of Cutaneous Medicine and Diseases of the Skin; edited by ERASMUS WILSON, F.R.S., *for January*, 1868.

Domestic Occurrences.

BIRTH.

JOHNSON.—*At Murree Hill, on the 9th instant, the wife of Surgeon* C. JOHNSON, *20th Punjab Infantry, of a daughter.*

MARRIAGES.

On November 24th, at Carrigaline Ch., Cork, Ireland, by the Revd. J. W. BENN, *Rector of Carrigaline,* E. HUNT CONDON, Esq., M.D., *21st N. B. Fusiliers, to* MARY JANE, *eldest daughter of the late* M. ROBERTS, Esq., J.P., *of Mount Rivers, Carrigaline.*

CAMERON—MURPHY—*At St. Thomas' Church, Middleton Road, by the* Revd. FATHER SHEA, S.J., CHARLES CAMERON, Esq., *Assistant Surgeon, H. M.'s Indian Army, to* ALICE MARY, *eldest daughter of* Mr. F. J. MURPHY.

BEATSON—WILLIAMS—*On the 25th February, at Christ Church, Bankipoor, Patna, by the* Revd. ALFRED NORRISH, WILLIAM BURNS BEATSON, M.D., *of H. M.'s Indian Army, Civil Surgeon of Nagpoor, Central India, to* ANNE, *eldest daughter of the* Revd. T. WILLIAMS, *Rector of Llangwm, Pembrokeshire, South Wales.*

Notices to Correspondents.

A MEDICAL MAN.—*You are quite right. It was through an oversight on our part that the names appeared. We will be more careful in future.*

Communications have been received from

Sub-Assistant Surgeon MIR ASHRAF ALI, *Agra.*
Assistant Surgeon B. W. SWITZER, F.R.C.S.I., *6th P. I., Kohat.*
Surgeon A. M. TIPPETTS *H. M.'s 5th Fusiliers.*
Dr. G. D. MCREDDIE, *Haraee, Oudh.*

The Indian Medical Gazette.

It is particularly requested that all contributions to the "Indian Medical Gazette" may be written as legibly as possible, and only ON ONE SIDE *of each sheet of paper.*

Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

Neglect of these simple rules causes much trouble.

Communications should be forwarded as early in the month as possible, for delay must inevitably occur in their publication.

Business letters to be forwarded to the Publishers, Messrs. Wyman Bros., and all professional communications to the Editor, direct.

Subscribers changing their address are requested to notify the same.

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

SPECIAL NOTICE.—*Subscribers are particularly requested to notify any changes of address, as otherwise no responsibility for non-receipt of copies of this paper can be assumed by* WYMAN BROS., *Publishers, Hare Street Calcutta.*

HARE STREET, *January*, 1868. } WYMAN BROS., *Proprietors.*

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and never own particular department, we find some of the brightest ornaments of British history, and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

A MEDICAL DIRECTORY FOR INDIA.

WE understand that Messrs. J. Corfield and Co. propose to publish, on the 1st October, a Medical Directory for India, similar to those for "the three kingdoms" which Messrs. Churchill and Sons issue yearly. The undertaking is one which, if properly conducted, will involve considerable labor, and the value of the results will of course mainly depend upon how far the profession throughout India second the efforts of the publishers, by giving them the required information accurately and without delay. In the absence of an official "Medical Register" (for which we are likely to wait a long time), or as a supplement to it, the proposed Directory cannot fail to be both useful and interesting. We trust that it will really include the names, qualifications, &c., of *all* medical practitioners, whatever be their rank, in India, from "Native Doctors" to "Inspectors General," and that no attempt will be made to recognise any *caste* distinctions whatever in the profession.

The idea of an Indian Medical Directory is not a new one. Seven or eight years ago the publication of one was attempted, in connection with the (now extinct) "Indian Lancet." Not being adequately supported, the scheme came to nothing. At that time, perhaps, it was rather premature; there were comparatively few practitioners unconnected with the army in India, and nearly all the information which the Directory was intended to convey could have been obtained from the Army List. Since that time, however, a large "uncovenanted" medical service has sprung up, and the number of private practitioners, both European and Native, has largely increased. A volume which would include all these various classes would be so obviously useful, that we have no doubt of its being generally appreciated. We hope that both the publishers and those to whom they must look for the necessary information and assistance, will do their best to secure a satisfactory result.

VERNACULAR EDUCATION IN MIDWIFERY.

although nearly as ignorant as their neighbours, are perfectly satisfied with their attainments in midwifery, and look upon any attempt to instruct them in their own profession as an unadvantages of scientific education in other branches of medicine to study in the Obstetric Wards of the Medical College Hospital. Institution, and in some cases Civil Surgeons have succeeded in we know, however, no effort has till very lately been made to carry out this object by *female* teachers, and it is therefore with great pleasure that we learn that this is now being done in the Lying-in-hospital attached to it, has been established, under the management of a lady who studied in, and holds the diploma of, Islands. The Municipal Committee of Amritsar have granted out-door dispensary connected with the institution, at which, seven pupils studying midwifery. Of these there are two Musalmanis, four Hindoos, and one Christian. Three of these pupils of which they are supported. Each pupil receives Rs. 5 a study, at the end of which time the pupil is to pass an examiMidwifery are delivered three times a week, in the vernacular, by the Superintendent, and are read out to the class on the almost entirely confined to the treatment of out-door patients, and of patients in their own homes; but, as soon as the objects of the hospital are better known, we have little doubt that many of the lower orders will gladly avail themselves of it.

The scheme is only in its infancy; but, considering the num-

women are fitted, either by physical constitution, or by previous education, to discharge the arduous, and in many cases painful every medical man. We should even object to see the midwife, however well educated, altogether supersede the accoucheur. now idling away their lives, without duties or objects to occupy them, might make themselves useful to the sick, without at all clashing with medical men. This is now fully recognised in England, where associations for the nursing of the sick, and for similar objects, are now numerous. A very important portion of the same field has now been entered upon at Amritsar, namely, the imparting professional education to those who, whether ignorant or not, will for a very long time be the only obstetric practitioners employed by the majority of persons in India. As these people will not receive instruction from teachers who has taken upon herself the onerous duty of educating first; and although we understand that the regular "dhyes," so far from obstructing her, have, in several cases, asked permission to attend her lectures, yet, when their practice begins to be shared, by those whom she has educated, they will probably begin to fight for their own vested interests. We trust, however, that she will persevere in her efforts. Even should the influence of the school never extend beyond the walls, it may effect a vast amount of good in such a city as Amritsar, the richest and most populous in Northern India.

Although the scheme under consideration has nothing directly missionary in its character, the lady who has taken charge of it is, we need hardly say, connected with a Christian Mission. At Delhi, where, as we announced last year, a female Medical Missionary is already at work, the establishment of a similar institution is contemplated. However the religious or political opinions of our readers may differ from those of these ladies, we are certain that every member of our profession will wish them God-speed in *this* portion of their work.

THE OOTERPARA INVESTIGATION.

tion was held by Dr. Bird, Civil Surgeon of Howrah, in the Ooterpara Institute, into the truth of certain charges brought Surgeon attached to the Ooterpara Branch Dispensary. The removal, and signed by a great number of the residents of Ooterpara, Bally, Belloor, and the neighbouring villages) were the charging exorbitantly for medicines ordered for his private patients, and endeavouring to establish a monopoly of drugs in Ooterpara. In support of the last charge the proprietor of the

opinion as to the truth or falsehood of the second charge. The attempt to prove malpraxis failed utterly, the witnesses showing both prejudice against the Sub-Assistant Surgeon and a ludicrous degree of ignorance as to the objects and capabilities of treatment. A very strong point in the memorial was the Sub-Assistant Surgeon's ignorance of obstetrics. It was implied that for eight years he had never delivered a patient successfully, and a "sensational" story was told of a Native lady whom he had delivered with the assistance of a Goldsmith's forceps, and who died under his hands! This, however, was *the only case* of obstetric malpraxis which could be brought forward, and it was easily explained. The Sub-Assistant Surgeon was sent for when the lady had been for four days in labour; he found her moribund, with the head of the fœtus, which was putrid, firmly impacted. On his explaining that he required forceps which he would be obliged to procure from Calcutta, as he did not possess them, he was offered his choice from among a number of Goldsmith's tongs, which he of course declined to use. As might have been expected, the patient died undelivered, an attempt to turn having failed. The other cases which it was asserted that he had treated improperly were equally absurd. One man complained that he had failed to save the life of one of his female relatives, who had been attacked with cholera; another, that when suffering from fever, he took the medicine prescribed for him by the Sub-Assistant Surgeon, and was frequently purged and vomited during the night; nay, one of the petitioners *avouched* the Baboo of having *successfully* treated him for "false polypus" of the nose. The long roll of signatures (upwards of a hundred we should think) appended to the memorial might seem to indicate that, rightly or wrongly, there was a widespread feeling of discontent against Baboo Soorjee Coomar Mookerjee. But the weight which might have been attached to these signatures was considerably lessened by the appearance of the petitioners. A large number of them were mere lads, and the rest either needy-looking old men, or servants. One of the latter class created much amusement, when asked who were the originators of the movement, by saying that "one of them was the Governor-General's durwan, and there were *several other* great men among them!" We can of course only speak of those who come forward to support their allegations, and cannot be blamed if we suppose that none of the very many Native gentlemen of respectable age and position who were present had any fault to find with the Sub-Assistant Surgeon. If they had, they should not have sat by silently, while schoolboys, servants, and garrulous (but not always venerable) old men made the whole investigation almost ridiculous by the nonsense which they talked. The fact that a large number of the accusers were either servants of the proprietor of the "Ooterpara Druggist's Hall," or were employed in the Calcutta Exchange, in which he holds an appointment, was, to say the least, a remarkable, if not a suspicious, circumstance. We do not attach very much weight to the fact that a number of letters were put in, signed by some of the memorialists, to the effect that, when they signed the memorial, they had no idea of its contents, and that they had been given to understand, by the persons who brought it to them for signature, that it would be the means of getting a second Sub-Assistant Surgeon appointed to Ooterpara, not that it was a petition for the removal of the officer already there.* As one of the most active of the Baboo's opponents said, a man who only knew enough English to sign his name, and not enough to understand the meaning of the printed paper to which he signed it, was probably quite as ignorant of the purport of the letter (signed by him, but avowedly written by another person,) in which he expressed his regret at having done so. Still, these letters, at any rate, showed how little value could be attached to mere signatures in the abstract. One person indeed wrote a letter denying that he had ever signed the memorial, although a signature purporting to be his appeared attached to it; but as he did not attend to substantiate the implied forgery of his name, no great weight can be given to his assertion. Granting, however, that all the signatures to the memorial *were bonâ fide* ones, and that the memorialists honestly believed every word which they said, the evidence given in support of the charges was so outrageously childish, and savoured so strongly of private spite and *zidd*, and there was, moreover, such a palpable community of interest among the principal accusers, that no unprejudiced mind could for a moment doubt that the case against Baboo Soorjee Coomar was altogether a made-up one. We speak of course of the evidence given at the public investigation. How far the documents produced by Baboo Dwarka Nath Chatterjee will, when examined by Dr. Bird, bear out the second charge, remains to be seen. As far as oral evidence went, that was as unsupported as the first had been.

It has been said by high authority that we should be able to find "good in everything;" and even from this disreputable attempt to blacken the character of a respectable public servant, Government may, we think, take one hint. The want of a forceps was made a peg whereon to hang one of the strongest charges of malpraxis. No doubt, had the Sub-Assistant Surgeon come provided with the entire armamentarium of Scultetus, some other excuse for finding fault with him would have been forthcoming. Still, we think that no Government Dispensary should be unprovided with a case of midwifery instruments. In this country no medical practitioner is likely to be called to a case of merely natural labour in a Native female. The fact that he is summoned presumes that the patient has been for hours, perhaps for days, in labour, and that Native midwives have done their best, or worst, for the case. The chances are, therefore, that by far the greater number of cases to which he is called require the application of instruments of some kind. It may be said that, in the present instance, the patient was a private one, and the Sub-Assistant Surgeon should have provided his own instruments. This, however, will not always be the case, and the authorities would not, at any rate, grudge their instruments to their medical officers for use in private practice, provided that they were always available for the public service. The diffusion of a rational system of obstetrics throughout this country is a most important object, and Government should facilitate it by providing all medical officers in their employ, who are not in a position to procure such luxuries for themselves, with the necessary appliances for treating difficult cases. If it is found that the "Doctor Sahib,"

* It is with very great regret that we have heard the name of a Sub-Assistant Surgeon of good repute, and a contributor to our pages, mixed up with this most disreputable transaction. He was openly spoken of as an *umedwar* for Soorjee Coomar Mookerjee's place, and one of the witnesses against the latter officer was reproached at the investigation by a lady friend as having given false evidence with a view to promote his interests.—*Ed., I. M. G.*

[illegible]

[illegible]

[illegible]

Meeting of the Bengal Branch of the British Medical Association.

The usual monthly meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College on Tuesday, January 14th, 1868, at 8.30 P. M. Dr. S. G. Chuckerbutty, President, in the Chair.

Proceedings of last meeting read and confirmed.

Proposed by Dr Collins, seconded by Baboo Govind Chunder Chatterjee, that the Annual Meeting for the election of Officers and reception of the Secretaries and Treasurers' Report be held at 4 P. M. on Tuesday, the 21st instant.

Baboo Govind Chunder Chatterjee read a report of the case of a Native Christian woman, aged 50, who had been admitted into the Medical College Hospital, under Dr. Chuckerbutty, on the 19th November last with symptoms of hepatic abscess, and died on the 28th December. The duodenum, omentum, and hepatic flexure of the colon were found to be matted together by inflammation. The gall bladder was slightly distended and sacculated, and its coats thickened. An opening large, enough to admit the little finger, led from its under-surface into the duodenum, close to the pylorus. Seventy-seven gall stones, mostly about the size of peas, but slightly polygonal from mutual pressure, were found; three or four in the duodenum, the rest in the gall bladder. From the hepatic flexure of the colon, another opening, large enough to admit the point of the little finger, led into a large cavity with ragged sloughing walls, bounded in front by the colon, the omentum, and the anterior abdominal wall, above by the diaphragm, below by the colon, and behind by the liver. There was a large ragged opening in the muscles forming the anterior wall of the cavity, but the skin was unaffected.

Dr. Chuckerbutty said that the question in this case was whether the large abscess between the colon, liver, and abdominal parietes was of idiopathic origin, or was the result of irritation caused by the passage of the gall stones into the duodenum.

A discussion of [illegible] followed, in which Drs. Ewart and Cuckerbutty and Baboo Govind Chunder Chatterjee took part.

Dr Ewart remarked upon the comparative frequency of cases of phthisis among Natives in the Medical College Hospital. It was generally believed in books that the disease was rare among the Natives of India, but experience had shown the fallacy of this statement. He had found very few cases of it in Native Regiments; but among prisoners in jails, or the poorer classes who frequent the Calcutta Hospitals, the disease was very common. Many cases of it had lately occurred in his wards, and he was now engaged in arranging the memorials of this disease, with histories of the same, in the Pathological Museum of the College.

Dr. Chuckerbutty did not believe the disease to have increased in frequency of late years, but that many of the cases which, in his student days, were returned as diarrhœa, dyspepsia, &c., were now more carefully diagnosed, and recognised as phthisis.

Baboo Govind Chunder Chatterjee suggested that the greater frequency of phthisis, as far as Calcutta was concerned, might depend upon the changes which had taken place in the habits and circumstances of the lower orders, and especially to the substitution of brick-built houses for those with walls of mat or thatch, whereby ventilation was greatly impeded.

After some further discussion on this subject, the meeting adjourned at 10 P. M. with a vote of thanks to the Chair.

(Confirmed.)

S. G. Chuckerbutty, M. D.

Extract.

At the meeting of the Medical and Physical Society of Bombay, held on the 1st instant, Surgeon Sylvester was unanimously elected Secretary. A case was read by W. Grey, Esq., after which a paper was read by Dr. Sylvester upon "Iridectomy." The advantages of this operation were lucidly pointed out, and it was proved by cases that in many instances where the operation was performed merely with a view to relieve pain and prevent increase of disorganization, sight to a greater or less degree frequently resulted. In other [illegible] this was shown to be singularly curative. The failure of the operation in certain cases, and the necessity and advisability of its repetition, were acknowledged and explained; and a most valuable paper was listened to with evident satisfaction by all present. Dr. Arnott complimented the author upon his paper as containing a [illegible] of what was previously known upon the subject, as well as much original thought, strengthened by the results of a number of operations performed in the Ophthalmic Institution. Some discussion ensued relative to the effect of the operation on the power of accommodation by excision of a portion of the iris. The thanks of the meeting, proposed by Dr. Ward, being carried unanimously, the meeting adjourned.—*Bombay Gazette.*

Local Correspondence.

METEOROLOGICAL OBSERVATIONS.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

Dear Sir,—When I resolved to send a monthly summary of meteorological observations to the Gazette, I did so, as I remarked at the time, under the hope that other men who took an interest in the subject in other places would do so also. Jessore, as the reputed birthplace of cholera, and a place almost proverbially of bad repute in a sanitary sense, would, I thought, afford an excellent opportunity of studying meteorological conditions with special reference to the causation of disease, and constitute, even more than Calcutta, a type of the climate of the delta of the Ganges. Having, however, completed one year's operation, apparently without executing any interest or effort on the part of any other reader or contributor, I have resolved to discontinue these reports. Now that a special Meteorological Department has been established in Bengal, towards the [illegible] returns are sent, the comparison and deductions which I desiderated can, with more profit and advantage, be made there, and the valuable space hitherto taken up by my summary devoted to something more acceptable to the majority of your readers, who perhaps do not see in the details of weather observations the interest and use which I, and others who may devote time and attention to the subject, do.

I remain,
Yours truly,
Kenneth McLeod.

Jessore, *15th July*, 1868.

MR. FITZGERALD'S PAMPHLET ON CHOLERA.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

Sir,—Allow me to thank you for the notice you have taken of my pamphlet on the "Nature, Treatment, and Prevention of Cholera" in your issue of the 1st January. While I feel grateful to you for what you have said in my praise, I do not demur against your right as an Editor in passing those remarks which savour of condemnation. When one commits himself to print, and more especially when, in so doing, he advocates opinions not generally popular, he must be prepared to bear with the censure critics may choose to administer him. I would, however, ask the favor of being permitted to offer a few brief remarks on two points contained in your review.

In [illegible] you say—"We think the world would have done well to have had a more extended trial before rushing into print." To this my answer is that I would have gladly waited for a more accumulated experience, could I have only calculated with any degree of certainty that the opportunity would have been afforded me of acquiring such increased experience. But cholera is not a disease in which any fixed calculations can be made. Outside of Calcutta its occurrence is of the most erratic nature. I felt that years might elapse before I would see another case; that possibly I might never again come in contact with the disease. I have known a surgeon of twenty years' service in India who never even witnessed an instance of cholera. Why might not the same happen to me in the future? Taking this into consideration, as well as the heavy mortality that usually attends epidemic outbreaks, it occurred to me that it would not be amiss to communicate to the public a mode of treatment which, in my hands, had proved very successful in a limited number of cases, so that, did further experience not fail to my

worse than the lines of treatment now generally followed.

time, another at another, and so on, according to the whim of the practitioner; but in this I fail to discern a sameness with what I have proposed. If one physician combine quinine with

pursued by any one of them is the same as that to which I have

manner just stated that quinine, acids, and the lancet have been

used, and yet, from difference in the mode of administration, the

twenty grains of calomel be given at once, and to another half-

the two patients have been treated quite differently, although the same drug has been given to both. It is in this way, and

or unthought of, that I claim a modicum of originality for the

I remain, Sir,
Your obedient servant,
L. A. [illegible],
Asst. Surgeon, 2nd Sikhs.

Dera Ghazi Khan, 14th February, 1868.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

Sir,—Can you kindly answer me a question which is of importance to me? I refer to Superior Government on the subject of Jail Allowances?

Is it necessary for a Jail Superintendent to pass in the vernacular of his district in order to entitle him to the authorised allowance?

No allusion is made to the subject in the G. O., and I do not believe that any such condition is contemplated. In this Presidency, however, the language test is rigorously enforced, before the Jail Superintendent can draw his paltry pittance of 50 Rupees per mensem.

Faithfully yours,
Jailor.

Madras Presidency, 30th January, 1868.

The suggestion is not required in the Bengal Presidency.—Ed., I. M. G.

THE JYEPOOR MEDICAL SCHOOL AND MATERNITY CHARITY

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

Dear Sir,—I have [illegible] Mr. Ralfe was now addressing himself to what he considered a more important educational object, being the establishment of a School of Arts. The Maha Raja, though somewhat wayward, is at heart a liberal [illegible] that the principles [illegible] Act [illegible] been brought into play, with a view to prevent what may be termed such a retrograde movement in the cause of civilization.

Any one interested in the advancement of philanthropic science, who, peradventure, may have visited Jyepoor, could hardly fail to be struck with the establishment of so many buildings, [illegible] Surgeon, and Colonel Price, the Executive Engineer. To confine

no native doctors, no dispensaries, no medical attendance

the most important public buildings difficult of access by reason

assuming medical charge; yet, by dint of perseverance, he overcame every obstacle. Native doctors were engaged and instructed by him. Dispensaries were established in the most crowded localities of the city, and were daily visited and supervised by Dr. Burr. At first, like every other innovation made by a European, these improvements aroused the suspicions of the inhabitants; but the kind manner and sound practical knowledge of Dr. Burr soon gained the confidence of the natives, not only in the city of Jyepoor itself, but also throughout the surrounding country. The great success with which he met induced him

a Hospital and Medical School, as well as a Maternity Charity. At the time of my visit the hospital was well attended, and many

were very intelligent, and appeared to be much interested in the lecture (on surgical anatomy) which Dr. Burr was delivering, with much fluency, in Oordoo. Dr. Burr next devoted his attention to prison discipline and hygiene, and effected many reforms; lastly, he superintended the construction of new roads, thereby

advantage of the people generally, by affording more light, space, and air. The Maternity Charity has been Dr. Burr's greatest success, whether we regard it in a scientific or in a humane point of view. Every three or four months, one or more well educated midwives have been turned out, and the cases of infanticide, if I remember rightly, decreased, after the first year of the establishment of this institution, to 25 per cent., and went on decreasing annually in geometrical progression. Such is a very imperfect outline of all the practical good resulting from Dr. Burr's increasing efforts; and it seems to me a pity that the labors of years, at the very time when they would have borne the best fruits, should be entirely done away with; not, I

the adviser of the Maha Raja has not supported Dr. Burr's labors in the manner which their great importance deserves.

Yours faithfully,
[illegible]

P.S.—I [illegible] lished, and that Dr. Burr contemplated giving to the students, during the summer session, a course of practical dentistry.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

Dear Sir,—I shall be much obliged if you will give replies in your next issue to the following queries for the information

1st.—When [illegible] Surgeon of the Indian Service, in charge of a Native Regiment, draw when proceeding on sick [illegible] the Hills or Kussowlie?

2nd.—What, if on general leave?

3rd.—If in charge of the Civil Station, Police, Dispensary, and Lock Hospital, in addition to his Regiment, can he draw any moiety of the pay for the same during his absence on sick or general leave?

4th.—Can he obtain general leave after the expiration of privilege leave in the Hills?

5th.—When absent on privilege leave only, is the person acting for him entitled to draw any portion of the Military pay of the absentee, or of the Civil pay or allowances?

6th.—When a Sub-Assistant Surgeon [illegible] the Surgeon in charge of the Civil duties, while the latter is absent on privilege leave, is he entitled to draw any of the Civil pay, and how much?

7th.—If the Civil Surgeon's leave be general, to what portion of the pay is the Sub-Assistant Surgeon, if acting for him, entitled?

Yours faithfully,
A Constant Reader.

1811 [illegible], 1868.

ANSWERS.

1. If under fifteen years' service, he would draw Rs. 784-9-6, or unemployed pay Rs. 780-6-6, plus half the difference (Rs. 10-14-0) between that sum and his employed pay (Rs. 800), Rs. 5-6-6. (A Surgeon-Major, or Surgeon of above fifteen years' standing, would draw unemployed pay, which is actually higher than that to which he is entitled when on duty with his Corps!)

2. On general leave he will be entitled to the same rate of pay (Rs. 794-9-6, or unemployed pay, according to his length of service) for the first six months, and after that to furlough pay.

3. No. These are local allowances, and are to be paid to the officer actually doing the duty.

4. Yes. All officers can obtain general leave (if taken in India) on the expiration of privilege leave.

5. A medical officer on privilege leave is entitled to the full pay and staff of his rank and (military) appointment; but before he can obtain privilege leave, he is supposed to have arranged with another medical officer for the discharge of his duties. We have generally understood that it was a point of honour among medical officers to discharge one another's duties gratis under these circumstances. According to the letter of the law, however, he is not entitled to civil allowances.

6. In this case also, the Surgeon and the Sub-Assistant Surgeon must arrange matters privately. The latter cannot be compelled to take the duty, and may make his own terms.

7. A Sub-Assistant Surgeon of the 1st or 2nd class would be entitled to Rs. 150, and one of the 3rd class to Rs. 100, monthly, when in independent charge of a civil station. We presume if that the civil allowances equalled, or fell short of these sums, he would be entitled to the whole of them; if they exceeded the fixed allowance, he would, we think, only draw the latter.—Ed., *I. M. G.*

Short Notices of Recent Books.

On the Pathology and Treatment of Albuminuria. By W. H. Dickinson, M.D., Assistant Physician to St. George's Hospital. London: Longman. 1868.

The publication of medical works is so frequently connected with other objects than the advancement of knowledge, that the reviewer seldom meets with a book in which he can find really new matter, and to which he can give his entire approbation. The admirable monograph on our table is, however, an exception. In this essay the author has not only connected in a tangible form the views of modern English and Continental writers on the subject which he has taken in hand, but he has added to the labors of others a fine series of pathological researches, which have done much to clear away the mist in which our ideas of certain kidney affections have been latterly enshrouded. Dr. Dickinson is a young and rising physician, but he is also a pathologist of no mean experience, as the essay which he has just published adequately testifies. The works of Bright, Wilks, Johnson, Rayer, Goodfellow, Barham, Harvey, and Grainger Stewart have done much towards elucidating the complex problems of renal pathology, and Dr. Dickinson appears in the field as no unworthy follower in the pursuit of truth. The book is divided into thirteen chapters, of which the following are the respective headings. Introductory, describing the general structure of the kidney, and giving a classification of renal disease; Anomalous urinæ and fibrinous casts; Pathology of Tubal Nephritis; Clinical history of Tubal Nephritis; Causes of Tubal Nephritis; Treatment of Tubal Nephritis; Pathology of Granular Degeneration; Subjects and causes of Granular Degeneration; Symptoms and effects of Granular Degeneration; Treatment of Granular Degeneration; Pathology of Depurative Infiltration; Symptoms and clinical history of the disease; Treatment of same; Comparison of the three forms of renal disease which are productive of Albuminuria; Changes of the blood in Albuminuria; Alcohol as a cause of renal disease; Climate in relation to renal disease. Of all the subject-matter in this valuable monograph, that relating to pathological changes is the most important, because the most novel. It is clearly too the feature for which the author intended the book to be pre-eminently remarkable. The plates and woodcuts alone would teach the student the whole pathology of the subject. The page-plates are ten in number, and are most of them sections of affected kidneys; some enlarged; others of natural size; and all executed in Messrs. Hanhart's and Tuffen West's best style. Some of them are chromo-lithographs, others are plain. The woodcuts interspersed through the text are remarkable for their fidelity, there being no attempt made to "clean up" structures which are naturally obscure, as is too frequently done in the preparation of microscopic drawings. Besides the original facts which the author publishes on the subject of pathology, there is another feature of his treatise to which we must direct attention. This is the information which has been collected from various sources touching the relation of kidney diseases to climate. Doubtless there is much in the chapter devoted to this question which comes within the province of unreliable hypothesis, and which can hardly be considered as established truth; but there is also a correlation of facts which is extremely suggestive. The tables from the Army Medical Reports are highly valuable, and the testimony which they give us leads to the conclusion that renal disease is much more frequent in temperate than in tropical climates. We have so far exceeded the usual limits of a "short notice," that we will only mention one more fact concerning this handsomely printed volume. To each paragraph is attached a marginal heading,—an expensive feature to the publisher, but one of great advantage to the busy practitioner. *Tout entier*, we say that Dr. Dickinson's monograph is a valuable addition to medical literature, and is not merely an ingenious contrivance for advertising the author's name, as too frequent occurrence.

The three-fold nature of Health and Disease. By E. Haughton, M.D. London: Churchill.

This is one of those numerous pamphlets with which luckless reviewers are so often deluged, and which neither instruct their readers, nor reflect credit on the authors. It displays an assumption of knowledge which can deceive none but the uninformed.

Rain: how, when, where, and why it is measured. By G. J. Symons. London: Stanford. 1867.

Mr. Symons is the highest English authority on rainfall. In the volume just issued he has given an account of the reasons why rain should be measured, and of the best means of effecting its measurement. He describes the various varieties of gauges now in use, states the advantage of each, and gives the student of meteorology ample and plain directions for carrying out his operations. Meteorology is now becoming so important a branch of scientific medical investigation, that we commend Mr. Symons's little book to the favorable notice of our readers.

A treatise on Frictional Electricity. By Sir W. Snow Harris. Edited by Charles Tomlinson, F.R.S. London: Virtue & Co. 1867.

Mr. Tomlinson, of King's College, here gives us an edition of Sir Snow Harris's book on Electricity,—a book which the author was prevented by death from issuing with his own hand. The book embraces an account of the practice and theory of frictional electricity, but the author was so staunch a student of the old school of physics that, though Mr. Tomlinson has done his utmost to bring the book up to the present advanced condition of science, the result has been far from successful. We cannot speak in very favorable terms of the book. The Editor's memoir of the author is pleasantly written.

On the Ventilation of Dwelling-Houses and the Utilisation of Waste Heat from open Fire-places. By Frederick Edwards. London: Hardwicke. 1868.

The best part of this volume is the series of plates illustrating the different contrivances employed for the purposes of heating and ventilating dwellings. The author writes clearly and forcibly; but though what he tells us is to a great extent the result of practical experience, it is stated in too dogmatic a fashion. The book has little claim to be considered scientific. The important axioms of Parkes, Angus Smith, Gilton, and others, recently made known, are entirely ignored, and there is an utter absence of anything like a scientific *raison d'être* for Mr. Edwards's treatise. He tells us how to let in air into our dwellings; but he is unable to tell us how much air we should admit, or for what reason a definite quantity per head, per hour, should be allowed to enter. He would do well to give a little attention to the Blue-book of the Cubic-space Commission. It now appears that for rooms, such as the wards of hospitals, constantly occupied, the quantity of air required is a constant quantity, no matter how variable the space. This fact Mr. Edwards either does not know, or has not fully appreciated.

angular curvature of the spine. Dr. Little has contributed a [illegible] tions intelligible. There is only one defect, and that is the omission of illustrations. The only figures given are those of the character, and by no means meet the necessities of the case.

The Laws of Combination of Chemical Elements. By T. J. KAY-SERLEY, M.A. London: 1868.

[illegible] clearly the difficulties of the respective methods of nomenclature of these celebrated chemists, he combines the views of all three, and expresses them in language admirably calculated to [illegible] Mr Kay Serley [illegible] fully the difficulties which meet the student of modern chemical notation, and consequently he has given us a little volume [illegible] on Atomic Weights and [illegible] It is on the whole [illegible] of success. We have [illegible] sufficient attention. Now it must be admitted that it is upon [illegible] edition, the author will see to this point.

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, January 18th, 1868.

The end of the old year [illegible] the first number of the new year's issue to every medical man in the [illegible] most distinguished pathologists and physicians, but he is also a [illegible] to place the results [illegible] of all who are interested in the study of nervous diseases.

It is the opinion of most of our profession, and, I dare say, of [illegible] to be confided to medical men. It is essentially a medical judgeship, and its duties cannot be satisfactorily discharged by a mere [illegible] learn, therefore, that the Coronership for Western Middlesex, [illegible] legal candidate in the field—the late Coroner's Deputy. Dr. B. W. Richardson, of "local anæsthesia" celebrity, was thought to be a candidate; but he has declined to come forward. Of those absolutely in the field, I may mention the following:— [illegible] the district, Dr. Diplock, of Chelsea, another local practitioner, and finally Mr. Hand, Solicitor and Deputy to the late Coroner. [illegible] medical candidates, the present division of the constituency will involve the overthrow of the medical, and the success of the [illegible] from £1,000 to £2,000.

The Medical Practitioners' Association meets on Monday next (20th), and some important questions will be discussed. To my mind, one of the gravest problems which the Society has laid down for solution is that relating to the employment of the out patient department of the hospitals as a means of [illegible] arrangements, this proposition is to be carried out. The [illegible] visit the hospital. Now this amount of work, even under the most experienced hand in "polishing off" patients, occupies from two and a half to three hours. Suppose then that in addition to this the unhappy physician has to give a brief [illegible] time, or procure strength, for the discharge of so onerous a duty. It seems to me that if it be really desirable to carry out this scheme of supplementary instruction, the only alternative on the part of the hospital authorities will be to largely increase the staff of assistant physicians. But is it really necessary to utilize the out-patient department in this way? Surely [illegible] the two end together always?

The Cantor lectures at the Society of Arts promise to be of some sanitary interest this time. They will be delivered by Dr. [illegible] chosen for his subject "Food; its varieties, composition, function, [illegible] question of nutrition in the spirit of modern scientific teaching. I have no doubt he will do good service. The Government is most anxious to lay down a scheme of dietary on sound physi[illegible] for some definitive and general expression of opinion on the part [illegible] elements of food.

[illegible] known as the [illegible] Vaccination." As might be expected, the competition for the reward was great. The premium, however, has just [illegible] The essays were [illegible] by Dr. B. W. Richardson, F.R.S., Dr. E. C. Wells, and Mr. J. F. Marson, of the Small-pox Hospital. There is no reason to think that any but [illegible] judges.

Dr. G. Harley, F.R.S., who for the last two or three years has been suffering from a painful ophthalmic complaint which compelled him to relinquish practice and retire to the country, has, you will be glad to learn, returned to his professional labors, and is perfectly restored to health. There are few young medical men who have reared so high a degree of friendship and respect as Dr. Harley, and few who in so short a time have risen to such scientific distinction as he has. His return has therefore been received with much pleasure by West-end practitioners.

An incident occurred the other day which showed me how little some even of our well informed physicians know of the recent advance in the therapeutics of electricity. I was speaking to a gentleman who is on the "Electrical Committee" of the Medico-Chirurgical Society, and in the course of conversation he said:—"It's all very well for them to talk of constant and interrupted currents, but what's to prevent my getting a continuous current if I turn the handle of my machine rapidly enough." I certainly was surprised, and I think those of your readers who have given any attention to the matter will be equally struck with this supremely ridiculous notion. Truly, a little learning is often a dangerous thing. Just conceive of the application of such a continuous current as this in certain nervous affections!

The Clinical Society is now fairly underway. On Friday week the Society met under the presidency of Sir Thomas Watson, and the meeting was attended, as the newspapers would say, by the *elite* of the profession. The President's address was very eloquent, though brief, and it dealt with the scope and duties of the Society. The most interesting feature of the evening was a spirited discussion on a case of exophthalmic goitre brought under the notice of the Society by Dr. Morell Mackenzie. Observations were made by Mr. Ernest Hart and Mr. Bryant, and by Drs. Austie, Handfield Jones, Greenhow, and Hyde Salter. The danger which threatens the young Society is that of being flooded with papers by members whose highest anxiety is to exhibit themselves rather than their patients, and who lose no opportunity of coming forward with observations which have often no real value whatever. I think the Council will have to exert decided stryptic measures to meet the hæmorrhage which I anticipate. I believe some scheme of this kind is in contemplation.

The appointments of the month have not been of much interest. Dr. Henry Lawson has been all but elected Assistant Physician to St. Mary's Hospital in the room of Dr. Markham; in fact, he is the only candidate recommended for the office. Dr. Tilbury Fox has been appointed to the post of Physician for Skin Diseases to Charing-Cross Hospital, and Dr. Prosser James, London Editor of the *Medical Press*, has been appointed Physician to St. John's Hospital for Skin Affections. I think I have told you of all the events of interest which have occurred during the month, and I may now lay down my pen till the next mail calls me into "active service" again.

The Progress of the Medical and Collateral Sciences.

The Analysis of Water.—The estimation of the organic matter in water, which, up to the present time, has been attended by so many serious difficulties and sources of error, formed the subject of a lecture by Dr. Frankland at the Chemical Society of London, on the evening of January 16th. Dr. Frankland described quite a new process for the estimation of the organic carbon and nitrogen, which is not only free from sources of fallacy, but is precise to a degree quite unexpected. By this new method, as small a quantity as the fifteenth part of a milligramme may be estimated with the greatest ease. The objection to the new plan is its extreme complexity, which would render it a very difficult matter to carry out by any but a chemist of considerable experience and powers of manipulation. The process is briefly as follows:—To a litre of the water is added an aqueous solution of sulphurous acid, and the water is then evaporated to dryness. The sulphurous acid converts the carbonates into sulphites, drives off the carbonic anhydride, but does not decompose the nitrates as sulphuric acid would. The residue is then beaten up in a glass basin with chromate of lead, and is placed in a combustion-tube with oxide of copper and metallic copper, the open extremity of the combustion-tube being connected with a Sprengel's air-pump, so as to exhaust the air from the combustion-tube and from a large inverted syphon, which is also connected with the tube. The combustion being carried on in the usual way, the gases are collected in the tube, and are measured by absorption. The figures given as the results of Dr. Frankland's method seemed wonderfully precise, and appeared to give a more correct estimate of the quantity of organic matter present, than the mode adopted by Messrs. Wanklyn and Chapman, described some time since in their pages. In the discussion which followed the lecture, Mr Abel, Dr. Voelcker, Mr. Dugald Campbell, Professor Wanklyn, the Chairman, and others took part. The controversy between Dr. Frankland and Professor Wanklyn will, it is said, be continued at the next meeting.

M. Claude Bernard.—This distinguished French Physiologist was elected President of the French Academy of Sciences at the meeting of the Academy held on the 6th January; out of 49 votes, 41 were given for Bernard, 3 for D. Quatrefages, 1 for Decaisne, 1 for Dumas, 1 for Frémy, 1 for Longet, and 1 for St. Claire Deville.

Physiological action of Alkaline Silicates.—Herr Schwann, the veteran originator of the cell theory, has presented to the Academy of Sciences of Belgium a memoir describing a series of experiments recently carried out in M. Melson's laboratory by M. Husson. Herr Schwann comments at some length on the importance of M. Husson's views, and thus sums up the results of his observations:—The alkaline silicates, given in such small quantities that the contents of the stomach remain acid, are completely decomposed, even when in a state of very dilute solution. The intestinal juices are unable to re-dissolve the liberated silica. The alkaline silicates therefore cannot enter into the blood unless the acid be given in sufficient quantity to allow them to reach the small intestine. When allowed to enter the circulation, only traces of them are to be found. They cannot be detected in the brain, the bones, liver, or bile, but an appreciable quantity may be found in the muscles. The spleen, too, occasionally contains them. The great bulk of the silica is found in the urine, in which it forms a deposit of silica and silicates mixed with carbonates and phosphates.—Vide *L'Institut*, January 8th.

The development of the Cutis forms the subject of a paper read before the Academy of Sciences at Vienna by Herr Kusnetzoff, a Russian physiologist. His views may be thus expressed. All the fibres arise from the processes of the cells, which elongate and bifurcate, especially during the first period of their growth. Networks are formed by the juxtaposition and interlacement of these processes. The office of the intercellular substance is to unite the fibres. The process of differentiation goes on more rapidly in the upper than in the lower layers. The young capillary vessels, instead of making their way towards the surface of the cutis, take an inward course. The development of the elastic fibres takes place at a later period.

The chemistry of apple-leaves has been investigated by Herr Rochleder, of the University of Prague. These leaves, he says, contain a considerable proportion of a yellow crystalline substance, and also of a substance which crystallizes in colorless needles, and which decomposes readily into sugar and another substance under the influence of heat and acids. The percentage composition of this substance is the same as that of phloridzine, but the product of its decomposition differs from that of phloridzine in being soluble in ether.

What is Odontoma?—Odontoma is the name given by M. Paul Broca to a species of dental tumour which is constituted, in most instances, by a hypertrophy of the normal dental tissues. M. Broca's memoir on the subject enters into many points of interest in the histology and pathology of teeth, and is of interest equally to dentists and physiologists.—Vide *Comptes Rendus*, December 30th.

The heat produced by electric discharges.—This important problem in physics has been receiving the attention of one of the ablest of German physicists, Herr Foggendorff, who has thus formulated his conclusions:—(1) The direct discharges of the electrical machine are hotter at the positive than at the

views. The true longitudinal fibres of the tendon arise from

lutely nothing that is new in histology.

organic principle, to which he gave the name of Protagon. By

ethyl-ammonium with iodide of methyl, to obtain very pure

in forming a piece of brain-substance by putting together, syn-

of an extract. This extract is treated with an equal amount of alcohol, and is then filtered; the residue is finally washed.

A new parabolic reflector for the Microscope has been constructed by Mr. Charles Collins, of London, and will be found, we think, very useful by the working student. Of course, a bundle of parallel rays as possible thrown on the plane mirror. This Mr. Collins's reflector effects admirably. The re-

observer is protected from diffused light, and is thus permitted to work more agreeably than with the ordinary lamp, and with more advantage.

The Brownian molecular movements, so familiar to micros-

has lately published a short paper on the subject of molecular

the corpuscles is due to currents of liquids which carry the molecules along with them. The particles often move in a reverse direction to that of gravity.

views correspond very closely to those expressed by Huxley in

Brèsiadecki's pathological conclusions are of considerable interest.

The Anatomy of Star-fishes

in diameter. These globules are covered with cilia. M. Jourdain was not able to discover the wonderful circulatory apparatus described by so many writers on general zoology.

The Fibrine of Blood.—Herr Mayer, of Worms, has given the Vienna Academy an account of his experiments, recently carried out with a view to discover the proportion of fibrine in blood.

blood during coagulation. The blood examined was drawn fresh from the carotid artery of a dog by means of a fine canula.

order to estimate the fibrine. The results obtained in this way

proportion of fibrine present in healthy blood.

Heart pulsations independent of nervous influence.—If

nervous system, either central or peripheral. His observations, which have just been published, were conducted on the chick three days old. He found that the heart, when removed from the body, continues its pulsations if exposed to a temperature of from 34 to 36° centigrade. Even if it be divided into minute portions, each of these will be found to contract and relax alternately. At this period the microscope fails to indicate the existence of any nervous structure, ganglionic or otherwise. From this fact Herr Schenk arrives at the conclusion that the heart's movements are simply contractions of the protoplasm under the influence of heat.

Liebig's Extract of Meat.—The Government has contracted with Liebig's Meat Company to supply a large quantity of this preparation for the use of the soldiers in the Abyssinian Expedition.

Detection of Salicine in Quinine.—A useful mode of detecting the presence of salicine in quinine has been suggested by M. Parrot. The new method is based on the reaction of chromic acid with salicine, and M. Parrot avers that by this means as small a quantity as half per cent. may readily be detected. The suspected quinine being placed in a flask, 2 cubic centimetres of solution of sulphuric acid in water and 4 cubic centimetres of concentrated solution of chromic acid are added to it; heat is then applied. If salicine is present, it distils over as hydrid of salicyl, and may be recognised by the violet color which it

A filtering-tap for Water-cisterns.—Those who cannot provide themselves with filters, might with advantage use the

would be found especially useful for the poor. It is an ordinary

this enlargement a quantity of the peculiar Torbane mineral, of which the silicated carbon filters are composed. When it becomes dirty after long use, it can be cleaned by simply

venting the escape of water.

Treatment of Snakebites.—An Algerian gymnast performing

depression and torpor of the nervous system by means of alcohol,

ORIGINAL COMMUNICATIONS.

ON THE ACTION OF COBRA POISON.

By Charles R. Francis, M. B., Lond.,
Surgeon Major, Bengal Army.

The subject of cobra poison is now attracting a considerable amount of attention in the profession in India and Australia. It is one of the highest importance in a physiological sense, and popularly as terrifying as cholera. To discover an antidote to the effects of this poison, based on its pathology, is worthy of our best efforts, and I therefore venture to ask to be allowed to contribute my quota of enquiry, (so far as it has gone,) in this direction, in your columns. The public is much indebted to Dr. Shortt, of Madras, who was the first to offer a pecuniary reward for the discovery of a *real antidote*, which has led to the offer of still further rewards, the sum total now amounting to £175. This may prove to be a useful and successful stimulus in some quarters, though it would be well if the area for observation were more extended.

We are all aware that the natives of India, throughout the country, believe that there is one animal, *viz.*, the *ichneumon, vernacularly called mungoose*, or "nyoura," which the poison of the cobra cannot harm. They believe that, if the mungoose be free after a contest with a cobra to go where it pleases, it will scamper off in search of some (unknown!) herb, and, eating it, become poison-proof. This is an obvious fallacy. It is difficult to conceive the existence of an antidote which is ubiquitous, and always available at once in the first place, and of such potency as to be able to overtake and neutralize the effects of the poison in the second, for some time must frequently elapse between the bite and the discovery of the antidote. No! The fact is that the mungoose, if fairly bitten, will die, and in the same way, *i. e.*, exhibiting the same set of symptoms, that other animals, dying from the effects of cobra poison, will. The truth is that, in its contests with a cobra, the mungoose escapes by its wonderful activity. It may be compared to a light infantry soldier, while the cobra is more like a heavy dragoon. I was for some years, however, a believer in the common idea, my belief being based upon the result of some experiments which I made when stationed at Banda, in 1851. By these it appeared that the mungoose *was* invulnerable, and I therefore endeavonred to make some preparation of this animal to experiment with as an antidote. The opportunity, however, for carrying on the enquiry soon passed away, and it was not till 1860, when I was quartered at Lucknow, that it occurred again; and I then became convinced that my former experiments must have contained sources of error. Major-General Sir R. Walpole urged me to repeat them, assuring me that the mungoose, if properly bitten, *would die*, adding that he and the late Col. Patrick Grant had proved this. I therefore collected, through the snake-charmers, as many cobras as possible, and in the course of a short time was able to muster seven fine lively specimens. These were kept in one of the verandas of my house, (which was well known as "Cobra Cottage," I myself being designated by the natives as the "Samp-wallah Sahib!") each in a deep earthen vessel, (*gurha*,) covered over with a loose lid. I gave them an airing morning and evening, taking one out at a time with a hooked stick, and offered them young frogs, birds, and milk for food; but they, with one exception, refused everything, and all died within from twenty days to a month of being caught, having lived quite long enough, however, to enable me to carry out the required experiments. These were performed in the presence of several witnesses, amongst others, of Deputy Inspector General Dr. J. Campbell Brown, C. B., and the results were published in a local journal, the *Oudh Gazette*. Before commencing an experiment, the cobra was *tested*, a supply of fowls and small birds being retained for the purpose. In each case the tested bird died shortly after being bitten in the usual away. It faltered in its gait, limped, sunk on the ground, became lethargic, and then fell into convulsions, in which it was carried off. Sufficient time was then allowed for a copious re-secretion of the poison, and the animal to be bitten was presented to the cobra. As a rule, the latter would not voluntarily bite its victim; and it became necessary to force the poison fangs into some fleshy part of the latter. In the case of the mungoose, the inner part of the thigh was selected. The operation was most successfully performed, in each case, by two snake-charmers, father and son. Three mungooses were operated upon, *and they all died* at intervals varying from fifteen minutes to six hours, each in precisely the same way. They were not allowed their liberty after being bitten, but were kept under observation. A dog, thus bitten, would, I believe, have succumbed likewise, but for the free exhibition of liq: ammoniæ. He foamed violently at the mouth, (one of the usual results of cobra poisoning,) and apparently evinced symptoms of approaching hydrophobia, which so alarmed the owner, that I believe he had the animal, which ran away, eventually destroyed. Three harmless snakes were then presented to three cobras in succession, and all died precisely as the fowls, mungooses, and little birds had died. In the experiment recently made by Dr. Fayrer in Calcutta, and recorded in the *Indian Medical Gazette* of the 2nd December, 1867, it would appear that a harmless snake was invulnerable; but, in the presence of the positive evidence of death occurring under the same circumstances, it would be well to have this part of the experiment repeated; and this it is, I believe, Dr. Fayrer's intention to do. It is probable, I think that an innocuous snake, when bitten by a cobra, *will die*. Such was the belief of the snake-charmer who witnessed Dr. Fayrer's experiment, and such, I know, is the belief amongst these men in Upper India. The *mode* of having the bite inflicted may be important. The snake-charmers at Lucknow maintained that, in the case of snakes, the ordinary method would not suffice; that it was necessary to bring the *jaws* of the two snakes into close union, and then, after locking them together, so to leave them. I therefore had this done. A slight contest ensued, during which it may be presumed the poison was emitted. It was thus that my harmless snakes were fastened upon; and they succumbed to the poison. *Two cobras* were now made to approach each other, the father and son, each holding a neck, with the thumb well pressed upon the back of the head. Neither liked this part of the experiments, as, had either cobra struggled and overshot the mark, its fangs might have been fastened into their hand. Happily, however, no accident occurred, and the jaws were well locked into each other. As might have been expected, neither cobra suffered. This experiment was conducted twice, each time with fresh cobras, and in both instances the cobras were alive and well a fortnight afterwards. Thus, then, it seems to be distinctly proved—(*a*) that the mungoose is no more proof against the poison of the cobra than other animals, although, possibly, it may take a longer time to die, in which case remedies, if early applied, would have a greater chance of success than in animals where death is more rapid; (*b*) that even snakes themselves, if harmless, are no proof against it; but (*c*) that poisonous ones are.

Now what is the pathology and morbid anatomy of cobra poisoning? For, upon an accurate knowledge of these should, if possible, be based our treatment. In the

but the appearance of the cells, in the blood examined by him,

and $\frac{1}{5000}$ of an inch.

We have yet to learn whether this condition of the blood, which has been thus twice, but not uniformly, met with by careful

Alterations in the blood elements may be due to mere meteor-

before the Society of Arts in 1855, and printed in their journal, states that, during the course of a series of observations made in India (in Bombay) on the direct influence of climate on the human body, he found that, after a period of continued rain, as during the monsoon, the blood became deteriorated in a remarkable and striking manner, the chief alteration being found to occur in the blood corpuscles,‡ as ascertained by the microscope, under every possible precaution for securing

ways; in the first, the red globules of the blood were found to vary, and that to a considerable extent, some of them being not larger than half the ordinary size; but the most striking feature was that a great number of them, instead of presenting their usual smooth appearance, were found studded with small highly-refracting granules of a fatty nature. The blood cells had undergone, in short, *fatty degeneration*. I may dwell for a moment, *en passant*, on the cause of this condition, highly interesting as it is to the pathologist and practical physician

As Dr. F. Watson observes, "an excessive amount of moisture in the air interferes materially with the functions of those two great

the vital conditions of the blood itself become altered, and ultimately the general health impaired." Hence the great importance of removing from the air a certain quantity of its moisture (in cases where this is excessive) when possible; or if not, of removing the individual to a drier climate. This condition of the blood is worthy of further examination.

Although, doubtless, changes in the blood *are* induced by the poison of the cobra, and more frequently, as Dr. Fayrer believes, in those cases where the poison is acting slowly, it is, I am inclined to think with him, more probable that the true pathology of cobra poisoning is to be found in the shock and

our treatment should be directed to it especially. Like other poisons which threaten to destroy the life of the patient in their progress, this will wear itself out *in time*; and the great

to keep the individual alive by various means, until the poison has passed away. *A ligature*, between the bitten part and the heart, to arrest, as much as may be, the introduction of the poison into the circulation and *suction*, to withdraw what may

commends itself as well to barbarous as to civilized nations. *Stimulants* are invaluable, there being nothing of this description probably better than the popular *Eau de Luce*, of which Ammonia (the professional remedy) forms the basis. *Oxygen gas*, (when available,) as recommended by a recent writer, would, I have no doubt, be of great value. I once had the satisfaction of aiding in the recovery of a patient, almost dead from diphtheria, by the careful inhalation of oxygen; and I have ever since been much impressed with the advisability of using it in all cases of depressed nervous energy, with a view to rousing a patient, and enabling him to "tide over" his temporary depression. And if, as Dr. Halford believes, the enormous number of cells (containing germinal matter) in the blood, and destroying its vitality, are formed at the expense of the inspired oxygen of the air, another powerful reason is furnished for its use.

With regard to the vaunted remedies, so-called specifics, for snake-bite, the profession generally has no confidence in any of them. Mr. Hood, writing on the subject in the *Lancet* of February 15th, 1868, says that no antidote is required; all that

value of this I can bear a very fair amount of testimony, having been called upon, in the course of a long service in India, to treat several cases of cobra poisoning. In all, where measures having for their object the prevention of lethargy were fully carried out, the result was eminently satisfactory, and the patient recovered.

There is one point in connection with this subject which I commend to the consideration of the homœopaths! If, as has been suggested by a recent writer, *a dose of the poison itself is the best of all remedies*, homœopathy may see, in this fact, an illustration of the principle "similia similibus curantur," and say "why, if we have the poison of the 'trigonocephalus lachesis' (a species of rattlesnake common in Brazil) as a polychrest in our homœopathic materia medica for the bite of the rattlesnake, why should we not have cobra poison as an antidote for the bite of the cobra?" But if, in all seriousness, it should occur to any gentleman, professing the doctrine of Hahnemann, to try this remedy, I would suggest, not the introduction of the poison by the mouth and stomach, (which would probably be followed by vomiting and ejection of the antidote (?) but the hypodermic method.

ON THE ACTION OF THE COBRA POISON.

By J. [illegible], M.D., F.L.C.S.E.,

(Continued from p. 71, No. 12, [illegible])

SECOND SERIES.

EXPERIMENT No. 1.

On the [illegible] March, 1868, the following experiments were

A full-grown ptyas mucosus, or rat snake *(dhamin)*, was bitten at 12-27 p. m. by a fresh cobra about two-thirds grown, and of a light brown color. The cobra was made to close his jaws in three different places at about two feet from the head of the ptyas. The bitten snake was then placed in a large box, with a wire front. 12-33.—Ptyas moving about actively in the box and darting out his tongue frequently. 12-40.—Seems very restless and uneasy; strikes at everything that approaches the cage. 12-57.—Active as ever. 1-2 p. m.—No change. 2-30.—No change.

There was no further change, and on the 13th the snake was quite well.*

The ptyas, *dhamin*, or rat snake, is very active and vigorous. The individual bitten must have been about eight feet in length. The cobra was about half the size.

Experiment No. 2.

A varanus flavescens, or *goluimp*, about two-thirds grown, was bitten at 12-38 p. m. in two places,—one on the thorax behind the foreleg, and one on the inner side of the hindleg, by a powerful, full-grown, and fresh cobra, about six feet in length, of a lightish color, and distinctly marked with the spectacles on his hood. 12-42.—The lizard lies quiet in the cage. 12-46.—Crawling about in the cage; slightly drags his forelegs. 12-55.—Very quiet; looks sluggish; eyes partially closed. 1 p. m.—Very sluggish; was taken out of the cage and placed on the floor of the room, where he moves. The forelegs are dragged with the palmar surface of the feet turned upwards, but when much roused, he is able to use the forelegs. 2-30.—Appears a little less sluggish; looks about. 2-45.—Replaced in the cage; has moved about in the cage, but is sluggish. Hardly responds to stimulus when roused. He remained for the rest of the day in this state. 11th March, noon.—Sluggish, and can hardly be roused. 4 p. m.—He died quietly.

Experiment No. 3.

The cobra that bit the ptyas in experiment No. 1 of this series was bitten by another fresh cobra of a much darker color at 12-45. The snake was made to close his jaws in two places, and, as in the other experiment, not only could the fangs be heard to penetrate the scales, but the marks of the puncture were visible, and the poison was left on the surface of the part near the punctures. The snake, after being bitten, was returned in a cage like that of the ptyas in the 1st experiment. 1-2 p.m.—Lying quiet, apparently unaffected. 1-15.—No change. 1-35.—No change. 2-30.—The only change is that the snake is on the alert, and keeps his head erect with hood spread.

No further change occurred after this, and on the following day the snake was well. It may be noted that this cobra was partially exfoliating his skin at the time when the experiment was made.

Experiment No. 4.

A ptyas mucosus, about six feet in length, was bitten by the large cobra at 12-54. Before closing the snake's jaws on the part the scales were scraped off. Blood was freely drawn by the snake's fangs from bites inflicted in two places. (This was the same cobra that bit the varanus). 1-8 p.m.—Appears sluggish; wound bleeding freely. 1-16.—Perfectly active, and moves about rapidly in the cage. 1-35.—No change.

There was no apparent change in the snake all that day or the next, except that it may have been little more sluggish. He died during the night of the 11th, being found dead on the morning of the 12th.

Experiment No. 5.

A very large bull-frog, "rana tigrina," was bitten severely in the inner side of the hindleg in two places, at 1-57 p.m., by the same large cobra that bit the ptyas and varanus. 2 p.m.—Frog walks about; bitten leg rather dragged. 2-5.—Seemed anxious to escape, and gave several cries as of pain or fear. But there was no further change; the frog remained quite well on the 13th.

The blood of the ptyas and of the varanus was examined by Dr. Colles and me with a one-eight inch object-glass and the A eye piece. There was nothing suggested of any change in the corpuscles.

It is to be remembered that death in both these cases occurred very slowly, allowing abundance of time for any blood change to take place. Of course the appearances in reptilian might be expected to differ from those in mammalian blood; but I doubt if there be anything to indicate such changes as Dr. Halford describes in human blood after the cobra bite.

However, the matter is still *sub-judice*, and requires many experiments, and those often repeated, before any decided conclusion can be formed.

It is especially noticeable that the deaths took place very slowly, and that the effects of the bite, even of a very powerful cobra, were much more gradually manifested in the cold than in the warm blooded animals. The frog escaped altogether, but this may be owing to the cobra having been somewhat exhausted by biting two other animals. I can hardly imagine that it was so; for when the snake's mouth was opened to make it bite the frog, the poison dropped freely from the fangs. It is probable that the quality, rather than the quantity, may be affected by the rapid discharge of the fluid, and that the exhaustion is caused by the excitement of rage as well as by that of fear, to which, under the circumstances, the snake is naturally exposed. The experiments were carefully conducted, and the snakes were handled by the same old man who officiated on a former occasion. Dr. Jerdon and Dr. Colles were present with me during the experiments.

* This snake died on the 17th, without any obvious cause.

A BRIEF REPORT OF THE OUTBREAK OF CHOLERA AT AJMEER DURING THE RAINY SEASON OF 1867.

By T. Murray, M.D.,

Civil Surgeon.

As soon as it was known that cholera had broken out among the pilgrims at Hurdwar, all proper precautions were taken, and arrangements made by the Civil and Police Authorities of this district, to prevent pilgrims from passing through Ajmeer. These arrangements were successfully carried out, and I have been informed that very few pilgrims passed through this station. Those who were returning to Guzerat and the Deccan branched off between Jeypoor and Kishengurh, one party taking the road through Marwar, and the other that through Meywar.

Reports had reached us of the prevalence of cholera in various parts of Marwar for more than a month before the disease made its appearance in Ajmeer.

The first case occurred here on the 26th of June, the second case on the 28th; both terminated fatally in a few hours. They were treated in the dispensary, and I made every enquiry with a view to tracing the introduction of the disease to stray pilgrims from Hurdwar, but failed to do so. No fresh case occurred for ten days, until the 9th July, when three more cases occurred, of which two proved fatal, and one recovered. Again there was [illegible] 15th July, when there were two cases. Between the 15th and the 30th there were twenty-two cases. From the 1st August to the end of September, 218 cases occurred.

Although the epidemic continued in the city from the 9th July to the 30th September, only 247 persons were attacked, out of which number sixty-five died, or 26·31 per cent.

At [illegible] Wa[illegible] [illegible] [illegible] [

the epidemic commenced, there were several thunderstorms with vivid lightning, but little rain. From the 9th to the 19th there was little rain to speak of. On the latter day there was a severe thunderstorm with heavy rain, and with it an increase of cholera. I observed on several occasions that, after a heavy fall of rain, a greater number of persons were attacked. This was particularly noticeable after a fall of three inches and one-tenth during the night of the 17th August. On that same night there was an increase of cholera in the city, and a case of choleraic diarrhœa occurred in the European detachment quar-

fort, both of which terminated fatally in a few hours, and immediate steps were taken to remove the detachment. The Deputy Commissioner (Lieutenant-Colonel Davidson) at once placed the residency, distant about two miles from the fort, at the disposal of the Officer Commanding, and the men were moved

was attacked with choleraic diarrhœa, but recovered, and there were no more cases after the removal to the residency.

The men of the detachment had been strictly prohibited for some time from going into the city, and had not come in contact

rain daily, and a steady increase of cholera. On a decrease of

subsided.

malady with the advent of pilgrims returning from Hurdwar.

I do not consider the disease altogether to have been of a very

symptoms of malignant cholera: the countenance rapidly assuming a death-like appearance; eyes sunken, with a dark livid circle round the eyelid; severe cramps, chiefly in the larger muscles of the extremities; urgent thirst; vomiting and purging, the discharges resembling rice-water; pulse feeble and fluttering, and soon sinking to below zero; tongue clammy, and cold to the touch; extremities cold, livid, and corrugated, not unlike those of a drowned man; a sense of burning heat at the pit of the stomach; and total suppression of urine.

In some few cases (and those were among the very worst) there was very little vomiting and purging. The patients, previously in health, were struck down suddenly, as though by lightning, and died in a few hours.

The jail, with an average daily strength of 340 prisoners, remained perfectly free from cholera during the whole time. I adopted the precaution of fumigating the barracks daily. Fires were also lit daily in various parts of the jail compound, and the conservancy arrangements were well looked to.

Ajmeer quite escaped the disease up to the 7th August, when a

admitted, and died in a few hours. I was not aware that the detachment was to be relieved by one from Beawur (where

Wood and dried cowdung fire were burnt daily in the lines and in the men's huts, and with beneficial results.

During the present epidemic, none of the hospital establishments was affected with the disease, although in constant communication with the sick and dying. In the epidemic of 1861, which was much more severe than the present, though it extended over a shorter period, three of the hospital establishments were attacked. They all recovered.

That cholera is a disease caused in the first instance by an atmospheric poison, is, I think, generally admitted; and that it is communicable in a limited sense, I also believe, one of the circumstances which concur to augment its intensity. "Some," as Doctor Watson very truly remarks, "are *beyond human control*; some may be obviated by the efforts of society as a body; some may be got rid of, or avoided, by each man for himself. We cannot regulate the temperature of the air, nor determine its barometrical pressure, nor influence on any large scale its movements. The removal of decomposing filth, the promotion of ventilation by opening up close and crowded neighbourhoods, the enforcement of effectual drainage, the constant supply of pure water, the prohibition of intramural sepulture; these are practicable objects fairly within the scope of legislative action."

The treatment employed was various. Calomel and opium

Spt. ammon. aromat.	...	mxl.
	...	
	...	
	...	

To be repeated every half-hour if necessary. After the third dose omit the opium. This combination possesses three essential qualities: it is at once stimulant, sedative, and anti-spasmodic.

Pills, composed of black pepper, opium, and asafœtida, were distributed to the different Police Stations throughout the district, with instructions as to how they should be given, and they

Similar pills were distributed throughout the city.

	...	
	...	

Every twenty or thirty minutes.

Chloric æther and chlorodyne I also found very serviceable, with and without brandy.

Where the thirst was urgent, I allowed the patient to drink pretty freely of either cold water or spearmint water. Soda draughts, frequently repeated, were found most grateful.

Mustard plasters and turpentine frictions were freely used Liquor lyttæ, applied to the pit of the stomach, had the effect of checking the vomiting in several instances.

the principles applicable to fever.

In the diarrhœa which was prevalent at the time, I found the following mixture very serviceable:—

	...	
Tincture of catechu	...	f ʒi.
Battley's sedative solution	...	mxxx.

Two table-spoonfuls to be taken after each loose motion.

The native doctors, and hospital establishment generally,

REMARKS ON THE DRY-EARTH SYSTEM OF CONSERVANCY.

By W. J. Moore, L.R.C.P.,

Surgeon, Bangalore Political Agency.

No less an authority than Mr. Simon (*a*) has recorded his deliberate opinion that typhoid fever and malignant cholera belong to the great group of diseases which infect the ground. A scarcely less able sanitarian, Dr. Budd (*b*), has also stated precisely similar views. The name recently conferred on typhoid fever, now admittedly a common Indian malady, viz., "pythogenic" fever, is indeed strongly suggestive of its origin. Murchison (*c*) unhesitatingly asserts that typhoid, pythogenic, or enteric fever, is often generated spontaneously by fæcal fermentation. Budd (*d*) also records his conclusions that in typhoid fever, as in small-pox, the *materies morbi* is excreted at the part where eruption occurs, and that, therefore, the secretions of the intestines contain the contagious matter, which may be conveyed to other parts in sewers, in night-soil, in water, &c. With regard to the propagation of cholera, the experiments on dogs, and [illegible] human beings), elsewhere quoted, appear to demonstrate satisfactorily that the choleraic fæcal material introduced into the system will excite choleraic manifestations, notwithstanding the recent offer of himself for experiment by an enthusiastic and unbelieving Parisian.

The [illegible] facts adduced by Theiesch (*f*) of Vienna, and by Pettenkofer (*g*), are well known, and therefore do not need recapitulation here. These observers are of opinion that the cholera fæces during their decomposition develope a peculiar poisonous material, which will, if introduced into the human body, induce the disease again. Acland (*h*), Snow (*i*), Carpenter (*j*), Allison (*k*), Routh (*l*), Sutherland (*m*), Bidie (*n*), Budd (*o*), Simon (*p*), Gibb (*q*), Parkes (*r*), and some other authors of scarcely less weight, have arrived at almost similar views, the majority asserting that, like the fæcal matter of pythogenic fever, choleraic discharges do not require the putrefactive process to render them poisonous. As it is certain that cholera always follows the great lines of human intercourse, and is frequently checked by deserts and conveyed on rivers; and as there is no recorded evidence of its occurring in one locality before a person could have travelled from an infected place to such locality, so it is equally beyond doubt that, *if* communicable by other means, the most general *media* by which is it propagated are the choleraic evacuations.

Similarly, there are other maladies which affect the soil, and which are disseminated by fæcal material. The researches of Von Siebold of Munich, of Kuchenmeister of Zittau, and of Nelson of Birmingham, have proved that cystoid worms are transferred to the human alimentary canal by being eaten in uncooked or half-cooked flesh. But Kuchenmeister (*s*), Leuckart of Giessen, Humbert of Geneva, and more recently Dr. Cobbold (*a*), have with certainty traced the origin of some forms of entozoa to dogs and pigs. Thus the *cysticercus cellulosæ*, the embryo of the *tænia solium*, has been found in the structures of such animals. Kuchenmeister caused a condemned criminal to take cysticerci from the hog, which quickly developed into tape-worm, and Humbert of Geneva experimented on himself with like results. It is also proved that the *cœnurus* of sheep proceeds from ova—the first embryo of [illegible] found in the excreta of dogs. In every female entozoon there are myriads of ova. It is estimated that, in a female ascaris, there are sixty-four millions of eggs. The dirty habits of sheep, of swine, and even of cattle in India, are well known. They will all eat human or other ordure when not well fed and tended. From the millions of ova of entozoa which must be deposited on the ground, there is little wonder that some at least find a germinating nidus in the quadruped, to be afterwards transferred in butchers' meat, in the form of echinococci, cœnuri, or cysticerci, to the biped man, in whom they develope their third growth or transformation, becoming one or other variety of worm. The prevalence of tape-worm among the flesh-eating Mussulmans, and among Europeans, especially in Upper India, has been referred by more than one author (*b*, *c*,) to the dirty habits of sheep and cattle; and Cobbold (*d*) suggests that all excreta of animals or human beings, known to have worms, should be burnt. "If they are simply allowed to drop and lie on the ground, multitudes of embryo escape destruction, and are eaten by cattle."

There are then three diseases, *viz.*, typhoid fever, cholera, and worms, which we know to be disseminated by the medium of fæcal material. It is also probable that other maladies, such as dysentery, may spread in a somewhat similar manner. Hence arises a very grave question as to the advisability of the much vaunted dry-earth system of conservancy. It is a trite saying—"There is nothing new under the sun." It is certainly unquestionable that to the Revd. Mr. Moule belongs the credit of the presumed beneficial application of dry-earth for purposes of conservancy, as now practised. But that earth is a deodorizer was known and *noticed* long before that gentleman proposed his system (*e*). Every cemetery is indeed a proof of this quality in earth. Such properties have been known to the Italians, and acted upon in Italy, for ages (*f*). Whenever, in that country, night-soil is removed, it is customary to mix it thoroughly with dry-earth. A hole is dug in the immediate neighbourhood of the cesspool, and a hole drilled low down into the latter. As the ordure or "sook" flows, it is mixed with, and deodorized by, earth, and taken away without unpleasant effluvia being perceptible. But there is every difference between a mere *deodorizer* and a *disinfectant*. There is reason to believe that earth does not act with any great certainty in the latter capacity. It is well known that some soils, such as clay and alluvium, retain organic matter for a lengthened period in an undecomposed form. It is on record that, some few years ago, a body of prisoners were employed in making a road in the Goontoor district (Madras Presidency); and that in cutting away the soil, they came upon the remains of a number of persons who had died of cholera during the famine year of 1838: and that cholera immediately broke out among the workmen. Again, a party of coolies, employed on a railway-cutting near Salem, [illegible] were seized in a few hours with cholera of a very severe type,

(*a*) Disregard of the Laws of Health. The *Times*, June 17th, 1861.
(*b*) The [illegible], 1859.
(*c*) On the Continued Fevers of Great Britain.
(*d*) The [illegible], 1866.
(*e*) The [illegible] the Tropics."
(*f*) [illegible] Medical [illegible], 1854.
(*g*) Pettenkofer on Modes of Propagation du Cholera.
(*h*) Acland's Memoir on Cholera.
(*i*) Snow on the mode of propagation of Cholera.
(*j*) Carpenter's Report on Water, and on [illegible] Association Medical Journal, 1854.
(*k*) Allison on Cholera. [illegible] Medical Journal, 1854.
(*l*) Routh on [illegible] Association Medical Journal, 1854.
(*m*) Sutherland on Cholera. [illegible], 1854.
(*n*) Bidie's Etiology of Cholera. *Madras Medical Journal*, No. 1.
(*o*) Budd, The [illegible], June 23rd, 1849.
(*p*) Simon Op. Cit.
(*q*) Gibb. *Sanitary Review*, No. 2.
(*r*) [illegible]
(*s*) [illegible]

(*a*) On Human Entozoa.
(*b*) Goodeve, Madras [illegible], May, 1857.
(*c*) The Author on [illegible] Entozoa. Art. on "Dogs."
(*d*) On [illegible] Human [illegible].
(*e*) [illegible] Dry-Earth System.
(*f*) [illegible] of Florence [illegible] Medical [illegible].

of chicken-pox, unimpaired for an indefinite period. And what is true regarding the *materies morbi* of one disease is equally

destructive agent to the germs of cholera, typhoid fever, and entozoa, there is every reason to believe that at least some

this is the case, the wholesale burial of human ordure, (some of which must necessarily be diseased) now going on under Moule's system of conservancy, is, most certainly, simply storing epidemic poisons, which will probably be turned up hereafter.

An eminent Indian Officer, Inspector-General Edward Hare, C.S.I., lately provoked a discussion by reading a paper on

Association of the Medical Officers of Health (c). From the remarks then elicited, it would appear that there is a growing feeling that the application of ordure to agricultural purposes is not altogether free from objection. Dr. Thudichum, whose

that "the immediate condition which makes this fever contagious consists in the noxious exhalations from the large amount of putrefying excreta buried in jail gardens." And in relation to this part of the subject, it should not be forgotten that the natives of most parts of India object to the use of human ordure

deductions, leads me to doubt if the present extensive application of the dry-earth system of conservancy is advisable. Could it be rendered quite certain that none but healthy fæces would be mixed with dry-earth and buried, the procedure would probably be, in this country at least, the best method of disposal of such material. But any such assurance is manifestly impossible. Choleraic, typhoid, or dysenteric fæces, or evacuations containing myriads of entozoic ova, must, from time to

public institutions, during seasons of epidemic disease, fæcal

carbolic acid. But these measures can seldom be thoroughly

precautions have not hitherto been employed. Moreover, it has never yet been satisfactorily proved that disinfectants destroy the vitality of the molecular germ of disease. Even admitting

enforced among a fugitive, nomadic people. By covering their excreta with earth, cattle were prevented consuming it, and thus spreading certain ailments; while even diseased material would be manifestly safer under ground than on the surface. The camp would move away, and leave it behind, perhaps to become to the pursuing Egyptians the cause of sickness, as has happened only too often in India, when troops have encamped on the sites previously occupied by other bodies of men affected with

divine inspiration in cities, or on the extensive and continued *local* scale contemplated by the dry-earth sanitarians.

Admitting the grave objection above detailed to the present conservancy system, the question presents itself—Is there any better plan? Until we are certain that disinfectants will radically destroy the germs or spores of disease, and until we are assured that none but healthy excreta will ever be buried, I believe that burning all such material is the only safe plan, not only for ourselves, but for our successors. Thorough combustion, with or without previous disinfection, would effectually prevent the dissemination of disease by human ordure, which the present dry-earth conservancy certainly

PATHOLOGY AND TREATMENT OF COUP DE SOLEIL OR INSOLATIO.

By Surgeon G. Barnard, M.R.C.S., Lon.;

R. M.'s [illegible] Native Infantry.

Phenomena of temperature [illegible] directly with the working of the delicate nerve-centres, the

is shown in the series of phenomena, we jointly denominate

to an extreme of atmospheric temperature, the body loses its power of maintaining its own normal temperature. And the

stituted central ganglia continue actively to generate nerve-force may readily be imagined to be really very limited, when certain other organic actions can proceed, as digestion, fermentation, budding and seeding of plants, and even the series of chemical decompositions of organic matter. Moreover, the ordinary, ample, and wonderful power the living body has, when all

nance of their own proper temperature to preserve "life" or the generation of nerve-force.

more than 9° or 10° above or below the normal standard;

and when the rise or fall approaches this small variation, there is serious danger to life. No wonder that the power of resisting external heat or cold being temporarily lost from some mere functional derangement perhaps, or from fatigue, that the gain or loss of temperature should affect so rapidly and fatally as it does the nerve-centres, for they, the most essential, are at the same time the most delicate structures in the body.

In coup-de-soleil or insolatio then, in its simple uncomplicated severe type form, the body having lost its power of resisting a rise of temperature from functional derangement or fatigue, we find the following sequence of events:—

1*st*.—Total paralysis of the entire system of cerebro-spinal nerves.

2*nd*.—Necessarily, immediate suffocation from loss of power to move the lung case.

3*rd*.—Stoppage of the heart's action in from three to five minutes.

Here we have profound coma, rapidly followed by apnœa, and this again by asphyxia and death. Cases as rapid as this have been seen and recorded; they are extreme, and for the most part occur in the direct rays of the sun; a more or less sudden check to the perspiratory action of the skin, probably, is the primary cause of the heat entering the body; the skin becomes dry, and the temperature rapidly rises in the fierce heat of a noonday sun to that point at which the nerve-machine can no longer do its work of generating the polar force "neuricity." Consequently all motion ceases, the heart, from its own inhibitory nerve power, being the last organ to succumb.

"A knowledge of extreme cases," says Sir Thomas Watson, "tends to throw light upon those that lie between the extremes." There are innumerable variations of degrees of severity, from the slight feeling of faintness, or sickness, or suffocation, which passes off with profuse perspiration or the use of a cold douche, or diffusable stimulant, to the sudden and complete paralysis, when, as Sir Ranald Martin says, "life does not seem to ebb or flow, but rushes torrent-like away." Many complications arise from intemperance in eating and drinking, especially from excess in spirit-drinking, in which the cases are so mixed up with the poisonous effect of alcohol, which has been very correctly described as death by slow apnœa, that it is difficult to define exactly in many cases whether the fatal effect was due to heat or alcohol, or how much to one, and how much to the other. Still in all cases the sequence of events is the same in the so-called vital organs; the nerve-machine suffers first, then the pneumatic, and lastly the hydraulic.

In some sudden cases, called by the American physicians "sun-syncope," it may possibly happen that the heart is stopped by the shock to the nervous system, and we have death by asthenia. This is an uncommon result, though abundant and undoubted evidence is nearly always obtained, in the results of *post-mortem* examinations, of death by suffocation in sun-[illegible], [illegible] often as in cases of suffocation from other causes.

When cases of insolatio are rife, there is always intense atmospheric heat, which is felt to be oppressive by nearly all who are exposed to it. There are no aërial currents. The atmosphere is still; no wind and breeze, however gentle, cool by passing over the moistened and sensative skin, and causing evaporation to take place more rapidly. The slightest current arising in the heated air always relieves the oppressive feeling just in proportion with the strength of that current. It is, I believe, simply the stillness of highly-heated and rarefied [illegible] that causes this sense of oppression.

The time of day or night in which men fall victims to the effects of heat vary. If it happens in the day, it is generally from direct exposure to the heat of the sun; but it very commonly occurs amongst English soldiers and others in the night, or towards the early hours of the morning before sunrise. Now this is the very time in the four and twenty hours when the so-called vital energy is at its lowest point. I believe it has been shown that more deaths occur from all diseases between 2 and 3 A. M. than at any other hour in the four and twenty.

Moreover, it is often found that the nervous energy has been still further depressed in unavailing efforts to digest an intemperate supper of very indigestible aliment. One medical officer told me that, whilst at Mooltan in charge of a European regiment, he found this was invariably the case, and though men were brought to hospital in the middle of the night insensible with coma and stertorous breathing, they quickly recovered on the contents of the stomach being removed by the stomach-pump, and, with a glass of brandy-and-water as a stimulus, they were fit for duty in from two to three hours.

It is true, as a rule, that no irretrievable mischief is done to the nerve ganglia from the effects of heat. In one case only, out of many *post-mortem* examinations referred to by Sir Ranald Martin, was any organic lesion found, and in the cases given by some American physicians, who have paid particular attention to the natural history of insolatio, nothing to account for death was found in the brain or spinal cord. This being the case, how does death occur, and how can we "obviate the tendency to death?" I have shown the form of death in the sequence of events; and assuming that the mischief done to the centres is *not* irretrievable, and that with time, and reduction of temperature by the cold douche, particularly to the head and neck and upper part of the trunk, their activity and their life will return again with their normal temperature, provided always that the circulation of the blood has gone on meanwhile. In the slighter simple cases, the cold douche rapidly restores action before the [illegible] system suffers materially; and though a man may have ceased to breathe, reflex action is excited by the cooling of the douches, and respiratory movements return. In many cases, however, the coma is more profound; no reflex action can be excited in time before the lungs have become congested, and the heart has ceased to beat. It is well ascertained that in all cases of complete suffocation (and complete insolatio is complete suffocation) the heart ceases to beat within four minutes and a half. Another minute only elapses before it is irrecoverably motionless, or can only be partially and temporarily recovered. In these severe cases then of coup-de-soleil with complete paralysis, we must supply for a time another power to take the place of the lost one. We must keep the circulation going at the same time that cold is applied, by performing artificially what the man himself has lost the power to do naturally, namely, to respire. This will give plenty of time for the cooling process to take place.

It is very well known that the circulation can be maintained for a length of time without the intervention of the cerebro-spinal system, and this physical truth has been taken advantage of in cases of poisoning by opium, and in suspension of nervous action from strokes by lightning, by the late Sir Benjamin Brodie with success; but I am not aware that it ever has been fully and publicly demonstrated to be necessary for the saving of life in insolatio, *i. e.*, in severe cases, when the cooling process cannot be carried out in time without it. I have three cases to relate,—one which I myself saved by keeping up the respiratory movements; one which was, and is still, looked upon in the light of a miracle; and one in which the victim's [illegible] tried [illegible].

[illegible]

About 3 P. M. of an April day, while in camp in the North-West Provinces, a sepoy of the regiment, of which I had medical charge, was brought into the hospital tent, [illegible]

to his chest, and heard a slight movement of the heart. His long

menced artificial respiration; three sepoys performed it under my directions.—one supporting the head and turning it with the body, the other two turning the body from the back on to the side, then pressing on the ribs, then turning the body back on to the back again, and then again to the side, and pressing the ribs, and so on,

minute. The patient then began to pant for breath himself, and lifted his jaw, but quickly relapsed again, and ceased again to

ed to for from ten to fifteen minutes longer; then he began to pant again for breath himself, and this time continued to do so; down in a greatly exhausted condition, but breathing easily. He had slight consecutive fever for two days, when he was discharged

out harm. The temperature in the direct rays of the sun must in the tents.

This case has often been quoted, but never understood; it is related in the fourth chapter of the Second Book of Kings, and was believed to have been a miracle, *i. e.*, supernatural, or

came, sending his servant Gehazi on before to lay his staff on hearing," and he went back to meet his master, and reported that "the child is not awaked." When Elisha comes, the child in therefore, and shut the door upon them twain, and prayed and put his mouth upon his mouth, and his eyes upon his eyes, and his hands upon his hands:" "and the child sneezed seven times, and the child opened his eyes." The staff was laid on the child probably in accordance with some custom, but was performed some positive physical acts—"he lay upon the child," and, from the position described, he not only induced an artificial respiration, but insufflation; he must necessarily breathe himself child's chest and abdomen with every breath he took; but the first sign of returning nerve-power is distinctly reflex, carried to the centres of respiration by the sensitive fibres of the fifth which supply the mucous membrane of nose and mouth and skin of face, for "the child sneezed seven times." All the motor nerves of respiration, from the spinal accessory downwards to the last intercostal, including the phrenic, were again restored to vigorous and renewed action after "rest."

to save life, but his knowledge of the physiology of life probably was not sufficient to enable him to understand the rationale

are doubtless in accordance with physical laws, also of Divine of the Divine nature.

A steersman, aged 40, was said by his fellow-shipmate, who was alone with him in the vessel, to have suddenly fallen dead. legal examination of the body was performed. We found the sion of the lungs (pulmonary apoplexy), of the right side of the heart, and of its coronary veins, with dark and perfectly fluid blood, reddish froth in the trachea, which was already of a brownish color from putrescence; the cerebral veins and sinuses were only moderately filled. Therefore, as there was no trace of any injury or other external violence to be found on the body, we were obliged to suppose that death had occurred by asphyxia from internal causes. In a purely medical point of view, it was certainly something quite unusual to see a powerful and organically healthy man die so suddenly by asphyxia (apnœa is here meant I presume) from purely internal causes. Perhaps, the great heat of an August day, accompanied with the violent bodily exertions of rowing and steering, aided perhaps by the free use of brandy, may have combined to produce this effect.

Though the last case is not illustrative of the use of artificial respiration positively, it is negatively; and I think no medical moment it being one of insolatio.

to lose, that, I believe, short and plain directions of the mode of performing the most efficient artificial respirations (Dr. Silvester's) should be made generally known; so that every man in the body of his friend or comrade until further assistance arrived.

In extreme cases it is an imperative measure; in incomplete forms, which are the most common, with incomplete partial paralysis, partial coma, and partial apnœa, each gradually increasing the other, the first by loss of nerve-force, the second by allowing imperfectly aërated blood to circulate, skilful aid to the respiratory movements will be found of great service. Finally, it must always be remembered that, whilst it is necessary to maintain the circulation, it is also essentially necessary to cool down the temperature of the body; the generation of nerve-force having been arrested by heat, (you never get any form of insolatio without heat, atmospheric heat,) will not be restored until the excess of heat is removed.

(*To be continued.*)

CHOLERA IN THE RUNNOO DISTRICT IN OCTOBER, 1867.

BY F. M. R. DUANE,

Assistant Surgeon,

Late Officiating Medical Officer, Runnoo.

THE experience of the past year will, it is hoped, satisfactorily show the value of preventive lines and of quarantine arrangethat when an outbreak occurs, *we do possess* immediate preven-

[illegible] it was known at Bunnoo that cholera had appeared in the adjoining district, a preventive line was established south of the Khattuk Hills on the 1st of June. The disease had threatened the Bunnoo district at a point Cis-Indus, even earlier in the season; but the line was not placed under quarantine until the 15th of July. Camps were organized in both directions, viz., at Latummur, nineteen miles distant, and at Nowrung Serai, sixteen [illegible] from the station. There was no sign of cholera in the former camp, but in the latter there were, on the 31st July, about 150 souls in quarantine, when at daylight, and on that day two sepoys of the 3rd Regiment Punjab Infantry were [illegible] seized with cholera. On the following day a third man was attacked. The camp was then broken up, the men were dispersed in two directions, and no other cases occurred. Two of these three men survived, but the third man, who had been waiting on one of the other cases when he was himself attacked. All three were Dogtahs who had travelled together for fourteen days; they had come from the Kangra District, in which cholera had prevailed within sixteen kos of their homes, when they had started to rejoin their regiment. The deceased left his home on the 13th July, and met the other two on the 15th; they were joined by four others during the journey, and the party reached Nowrung on the 29th July, where the three men attacked occupied the same tent. None of this group of men had passed through any infected place. The inference is, therefore, that the morbific agent was carried by them for a period of eighteen days or more, and that it was fostered into activity in the close atmosphere of a tent filled with human beings, with bad water for an exciting cause. No evidence as to the origin of the infection at their homes could be educed. The contagious nature of cholera here receives an illustration in the incident of the man waiting upon his comrade having been *last* attacked; and the usefulness of prompt dispersion was also satisfactorily demonstrated. But the first subject of the disease had not been removed from the tent for several hours, and this delay engendered the succeeding cases.

On the 19th September a kahar of the 3rd Punjab Infantry, who had recently visited Nowrung Serai, died of cholera at Bunnoo. On the 20th a bheestie died in the city with very suspicious symptoms, but no connexion between these two men could be traced. In both instances every precaution was taken (to be detailed hereafter) to destroy all traces of the disease. Subsequently, another bheestie, in the same locality in the city, was attacked with choleraic diarrhœa, and survived. It is not improbable that the kahar, who had just returned from Nowrung Serai, had received infection on the site of the former quarantine camp, the Native Doctor in charge of which had neglected to have the *dejecta* buried. The circumstance of the two watermen being affected in the same locality, after the lapse of a fortnight, is suggestive on the one hand of local contamination, and on the other of the destruction of the morbific agent by adequate means, as no more seizures occurred in that quarter.

The preventive lines were perseveringly maintained by the authorities in both directions until the 1st October. And although the epidemic touched immediately upon both lines, the scourge was effectually kept back up to this period; but on removing the cordon it was [illegible] prematurely removed on the Kohat side. The disease had raged in the Kohat district since June; it had spread into the Khattuk Hills bordering on Bunnoo, where it was [illegible] *prevalent* on the 1st October. The necessity for the *continuance* of strict quarantine on this side was [illegible] but the means of defence were no longer available in the opinion of the Deputy Commissioner, who [illegible] in the very mistaken idea that cholera is harmless in the cold weather!

The hindrance which had proved so effective for so long a period was [illegible] as a natural consequence, cholera quickly glided over the border. The removal of quarantine, and the inroad of the disease, were clearly the cause and effect. There was nothing unusual or unseasonable in the weather at this period. From the Khattuk Hills towards the station of Bunnoo, on the river Koorm stretches a barren waste called the Thull. The sparseness of the inhabitants on this unfavorable tract *retarded* the approach of the pest; but, on the 2nd and 3rd October, a few suspicious cases were heard of on the edge of the Thull near the Koorm. On the 4th October was the Friday fair day at Bunnoo, and on this day two undoubted seizures were traced within six miles of cantonments. About noon the Assistant Commissioner was advised to prohibit the people from the tainted quarter coming to the gathering; which movement was attempted, but it was ineffective from the lateness of the hour. On this day Wazeerees from the Thull, and Khattuks from the Hills, rife with cholera, flocked to the fair after a long enforced absence. One hillman, who came to visit a brother in the 5th Punjab Infantry lines, and who also slept in the Police Barracks, died suddenly out in a field where he had been detained, to all appearances, by exhausting evacuations. The 5th Punjab Infantry and the Police each had a fatal case of cholera; and there was a case in the city on the 4th October, besides two deaths reported. And then it was apparent that the dreaded scourge was upon us in earnest. On the 5th and 6th there were fresh cases, after which the number increased daily until the 9th, and then decreased until the 11th, on which day the epidemic was extinguished in the city. There had been altogether, from 4th to 11th October, thirty-two seizures in the city, of whom twenty-eight died. But only 21 of these had been brought for treatment; the remainder had died untreated.

The disease had appeared simultaneously in scattered cases at all points in the cantonments, where it lingered later than in the city. The following Table exhibits all the cases treated in city and cantonments during this short-lived outbreak:—

	City.		Cantonment.		
Date.	Number treated.	Number died.	Number treated.	Number died.	Remarks.
October, 1867.					
,, 4	1	...	...	...	
,, 5	1	...	...	...	
,, 6	2	2	2	1	
,, 7	1	1	2	2	
,, 8	7	7	2	...	
,, 9	7	5	2	1	
,, 10	1	1	1	...	
,, 11	1	1	...	...	
,, 12	...	..	...	...	
,, 13	...	...	..	...	
,, 14	...	...	1	...	
,, 15	...	...	2	...	
,, 23	...	...	1	...	
Total ...	21	17	15	4	

A striking contrast will be observed in the ratio of mortality between the city and cantonment, but the reason was plain. The patients from the latter were received early for treatment, while those from the city were brought too late. Cholera is curable in the first stage, by which is meant before complete collapse; and this is why we hear of so many cures for cholera. The cantonment cases had, all but two, entered upon the collapsed stage on admission. The terrible nature of the malady was manifest, but there was absorptive power remaining, and consequently time for treatment. Whilst the city people, excepting a very few, were brought in a *hopeless state*, and were beyond the aid of medicine. But it was considered an important step to remove persons so affected out-

Cholera Conference must surely far outweigh any adverse in-

regiments were put into camp, the next Friday fair gathering

against all outside communication.

to create a panic" interfered in some measure with the *earlier* adoption of these means of precaution. It cannot be too forcibly

tions with known infected places. But the value of cheerfulness and of moral support is unquestionable. And British officers, both civil and military, were never more conspicuous

were both contagious and infectious, just as if it were an out-

all traces of the poison, in the hope of thus extinguishing the

out of the city as quickly as possible into an out-house in the dispensary compound. And from cantonments all cases were sent into an hospital camp, carefully placed with reference to prevailing

house in which the disease occurred was abandoned. In the instance of soldiers in barracks, a section of the Company was

habitation was dug up to a depth of three or four inches, and the earth was buried at a safe distance. *Fourthly*, the exertia were removed and buried, under responsible supervision, in dry places.

and bedding of fatal cases, and the soiled clothes of survivors, were burnt, but the unsoiled coverings of the latter were dipped

and upon the persons of the patients, which effectually neutral-

up at the bedsides of the sick, and were lighted inside all infect-

quarter of the city by its inhabitants, and from all these precautions the deduction seems reasonable that, in this outbreak at Bannoo, the epidemic was controlled and stamped out in the

logy of the disease. There was evidence enough in the frightful mortality among the city cases of the violent nature of the "irritant" in the blood. Then how explain the comparatively tranquil state of the voluntary muscles? May not the organic muscular fibres have been *equally unaffected* by the virus?

unaffected if unoxygenated blood were so continuously conveyed to the brain. There is room for further pathological research, but the old belief in the *mechanical* arrestment of the thick residue of the blood, after the escape of its serum, may now be considered as set at rest.

In practice, my treatment was opposed to the eliminative theory, which seems to be fast coming into favor. It is well known that cholera is curable up to a certain point in its course, and I know that, in this outbreak, nine out of thirteen of the cantonment cases, and four of the civil patients, in all of whom the renal function was suspended for periods varying from twelve to thirty-six hours or more, under actual observation, were saved by *checking the effusion*. It is a proven fact that the morbific principle does escape by the medium of the dejections; and this is the foundation of the eliminative theory. But it is also a fact that if the effusion be *unchecked*, the most probable result will be death; while if the flow be checked before collapse is complete, reaction and recovery may be hoped for in the majority of cases. How then does the non-eliminative, or obstruent system of therapeutics become curative? We are told that the rapid reproduction of the poison germs in the blood "accounts for the frightful progress of the disease. Our whole aim should therefore be directed towards discovering an agent capable of neutralizing the vitality of the poison in the circulation. But there are many remedies used by the disciples of the non-eliminative system that are largely successful, not only in suspicious cases, but in declared cholera, up to a certain point in the algid stage. It cannot be supposed that the various *cures* are all antidotic; that they have the power of arresting the effusion, and *simultaneously* of destroying the vitality of the reproductive germ. Perhaps the explanation may be that the *vaunted* vis medicatrix naturæ has the power to *divert* the expulsion of the morbific germs to other

The treatment pursued was two-fold. Camphorated chloroform in 20 m doses, repeated according to urgency, was rarely rejected. This is not a new preparation; it is the simple saturated solution; but I am not aware of its having been previously used

℞ Argenti nitratis .. .. .. gr. j.
Camphoræ .. .. .. gr. ij.
.. .. .. 1.

In the [illegible] were given, together with the happiest effect. The [illegible] of silver paste is favorably spoken of by an old Indian Surgeon, Dr. Esdaile of Bengal. When given in combination with the [illegible] the second or third paste was invariably [illegible], and I should in future trust to these united remedies with confidence. Sinapisms were applied early over the stomach and across the loins, and were repeated often in the latter region, until urine was secreted. Spoonfuls of acidulated water, or of dilute alcohol (1 [illegible]) were frequently [illegible] to the limbs was employed to assist the circulation, but cramp was never a prominent symptom, and needed little attention. A dose of castor oil finished the treatment in the surviving patients, who [illegible] usually [illegible].

I may observe that, when the people fled from the city of Bunnoo, the infection was of course transported into the [illegible], but, although it occupied [illegible] points, it prevailed [illegible] only in one village on the outskirt of the district. There were forty-seven deaths recorded among the rural [illegible] at the [illegible] October and [illegible] November. The lesson here learnt was anticipated, *viz*, that dispersion is [illegible] than if the inhabitants had remained shut up in the city to give intensity to the scourge. Finally, the digging up of the floors is regarded by me as an important prophylactic action, from the belief that the materies morbi *sinks to the ground*. Perhaps, like carbonic acid and other poisonous gases, the cholera [illegible] abound in the lowest stratum of air. Although this theory is [illegible] to the [illegible] view of the [illegible] of [illegible] is based upon the [illegible] person lying upon the ground, in preference to one raised upon a cot beside him. Perhaps, too, this hypothesis may account for the circumscribed prevalence of cholera in peculiar outbreaks confined to one barrack or one street.

STATEMENT OF CONTRIBUTIONS TO THE MUSEUM OF THE MEDICAL COLLEGE, CALCUTTA, BY MEDICAL OFFICERS IN THE MOFUSSIL, FOR THE THREE MONTHS ENDING 31st MARCH, 1868.

By Surgeon Joseph Ewart, M.D.,

[illegible]

Number.	Date of receipt.	Donor's Name.	Number in Catalogue.	Short Description of Specimen.
1	1st January, 1868	Assistant Surgeon W. P. Hall, M.D., Civil Surgeon, Sylhet	795	Monstrous [illegible] kidneys, with double pelves and two ureters.
2	10th „ „ „	Assistant Surgeon R. Maxwell, M.D., Civil Surgeon, [illegible]	818	[illegible] from [illegible] of chest.—*Lancet and Medical Gazette*, Vol. [illegible].
3	8th February „ „	G. F. M[illegible], Esq., Civil Surgeon, [illegible]	819	Portion of [illegible] removed by [illegible] at one [illegible].—*Lancet and Medical Gazette*, Vol. III, page 84.)
4	18th „ „ „	Sub-Assistant Surgeon Tarkhul Nath, [illegible]	820	Strangulation of ileum caused by its twisting upon itself.
5	4th March „ „	Mr. A. B. Smith, Junior Surgeon, Howrah Hospital	823	Large abscess on [illegible], with dilatation of pelvis and calyces.
6	17th „ „	Dr. B. N. Hyatt, Civil Surgeon, Raneegunge	826	Portion of [illegible] which protruded through a wound in the abdomen, and was removed by ligature (*Lancet, Medical Gazette*, Vol. [illegible], page [illegible])
7	„ „ „	[illegible]	827	Forearm removed for necrosis.
8	26th „ „	Assistant Surgeon J. McLeod Cameron, M.D., Civil Surgeon, Monghyr	829	Extensive rupture of right of ventricle from a railway injury.
9	18th March „	Assistant Surgeon R. T. Lyons, Civil Surgeon, Howrah Pindee	830	Diseased placenta.
10	„ „ „	[illegible] „ „	831	Gunshot wound of heart.

TREATMENT OF DYSENTERY BY NATIVE MEDICINES.

By Meer Usheeti Alli,

Lecturer on [illegible] of Medicine, Medical School, Agra.

In my professional [illegible] I have often observed the successful treatment of dysentery by the hakims of Upper India. They often cure the disease simply and effectually by means of aperients, mucilaginous drinks, and light farinaceous food.

This led me to find out the effects of those native medicines which are daily used for this intractable malady. Having collected with great difficulty several prescriptions of note, I commenced to administer them among the house patients of the Agra Thomason Hospital.

From my experience of the last seven years, and from experiment in upwards of three thousand cases of dysentery, I have at last succeeded in finding a plan of treatment by native medicines [illegible] than [illegible] any I know of here.

Mode of Treatment.

When an aperient is required, the powder of aniseed and [illegible] myrobalans, [illegible] *chebulaj*, a dram each, to be given at once. Two such doses to be repeated after an interval of three hours, should the first [illegible]. When [illegible] stools, I have often mixed with the above powder twenty grains of *amla* (Emblic myrobalan) [illegible] five grains of ginger. This acts as a mild laxative, diminishing griping, increasing intestinal secretion, and lessening the quantity of bloody mucus in the stool.

After the operation of the laxative, or in those cases where no preliminary aperient is indicated, I have given the following draught with much benefit.

Take of Bihidana seed (*Cydonia vulgaris*—Quince), Rasha Kutme (*Malva Sylvestris*—Marsh Mallow), each ninety grains; pure water six ounces. At first soak the above for an hour in water; afterwards rub the ingredients for half an hour, and strain. Add to this mucilaginous liquid Ispagool (*Plantago Ispagula*), [illegible] each thirty-five grains, and Syrup of Banafsha (*Viola odorata*.) The syrup is prepared from its flower. Take violet flowers four ounces, sugar two pounds, water four [illegible] boil down to the consistence of syrup. This is a single dose given at once, and repeated, if necessary, twice a day. If there be blood in the stool, then add to the above mixture the infused water of forty grains of unjabar root (بیخ انجبار)—plenty is to be had in all the bazars of Hindustan. This plant grows on the banks of the Euphrates, and is used internally to [illegible]

In [illegible] to [illegible] the dirt at the [illegible]

benefit

draught often, without failure, in arresting the attack or the

mucous membrane of the large intestines, causing immediate relief of tormina and tenesmus, and speedy restoration of the primary

it prevents disorganization of the intestinal mucous membrane; and if given in the advanced stage, it gives tone to the muscular

Under its use, the discharge from the bowels is always free, slime and blood disappear, and the stools become feculent. It has no depressing influence over the system, neither does it cause nausea or vomiting. It has an agreeable sweet taste. It can be given without any harm to pregnant women, and also

My experience of this treatment is confined to the natives of India; but I doubt not that the same results may be observed in European constitutions.

CASES FROM PRACTICE.

STATE OF THE HEART IN ARSENICAL POISONING

[illegible]

Deceased was apparently a healthy man, about 22 years of age.

dilated; the walls and valves were natural; numerous patches,

columnæ carneæ; the inner surfaces of the right ventricle and of

The whole track of intestinal canal was highly congested; no fæces in intestines, only a large quantity of glairy mucus; liver and

[illegible]

AMPUTATION OF THE PENIS

[illegible]

anything that would remove the loathsome disease from which

History.—Three years ago he first felt his urine smart him severely when being voided. Shortly after he noticed an sores to have gone nothing for it, and the disease went on, at the organ increased so much in size and weight, in proportion to his age and stature, that it became truly burdensome, from the cords and loins.

prepuce thickened, and contracted into phymosis over a withered

tins, and to grasp the wound and control the spouting arteries, five of which required ligatures, the two of the corpus cavernosum being rather troublesome to secure. A female silver catheter was inserted into the patulous urethra; the wound dressed with wet lint, and secured by a T bandage. About an ounce of blood was lost. What was removed weighed seven ounces and three drachms.

passed. The boy had a good night's rest, and was very hungry.

of inflammation was present, and the scrotum was much swollen, but there was no pain; a clean tongue and quiet pulse. In order

warm water for half an hour, and applied six leeches to the pubis.

of permanganate of potash, and the scrotum supported on a pil-

and wound granulating healthily.

from his age and the probability of his never having known

cicatrix and the opening of the urethra. He was furnished with

introduction of the catheter for two hours each day during the

CASE OF FATAL MELENA.

By Surgeon A. M. Tipletts,

1st [illegible], H. M.'s 5[illegible] Foot.

As the subject of melæna, and its relation to scorbutic taint, seems to be creating some interest just now, I send you the following case, which occurred last autumn in my regiment.

Mrs. B., a healthy young English woman, aged 21, arrived in India in December last. She suffered in September last from a slight attack of remittent fever. On the 5th of the month she had a considerable [illegible], which, however, stopped towards evening. On visiting her in the evening of the 6th, I found her feverish and irritable, and recommended her (as she had a child to look after, and her husband was also ill) to go to the Female Hospital. She did so, and was seen by the Apothecary at 8 P.M., and also at 9 P.M., when she was free from fever, and expressed herself as being better than she had been for some time. At 1-30 A.M. on the morning of the 7th, the Apothecary was called to her, and found her, as he described to me, as if in collapse from cholera, and passing large quantities of dark-coloured blood. This continued till about 2 A.M., when she died. I may add that plenty of vegetables of all kinds had been issued to the regiment for the whole year, and that the above patient had been living as nurse to a lady in the regiment for some months previous to her attack of fever, and that consequently her food had been of a better quality than it might have been in barracks.

Trichinopoly, 15th [illegible], 1868.

WOUND OF THE SPLEEN; REMOVAL OF PORTION; RECOVERY.

By B. N. Hyatt, M.R.C.S.E. & L.S.A.L.,

[illegible], Ranchee, Chota Nagpore.

The case of which I am about to speak is in many respects one of considerable interest, and makes suggestions of a most important nature to my mind. It is as follows.

Moherrall Singh, a Rajpoot, aged 30 years, was brought to the Charitable Dispensary at Ranchee on the 10th December, 1867, having been wounded with a talwar on the 9th over the region of the spleen.

On examining him at 4 p.m., I found a long incised wound, through which a portion of the spleen, about the size of one's hand, protruded. Around this, the wound had, to a measure, contracted, and it was impossible to return the protruded portion within the cavity of the abdomen; nor do I think that, had it been possible, I should have attempted it, feeling confident that there would be more chance of the patient's dying from peritonæal [illegible], than under the treatment which I resolved upon.

The [illegible] of the patient was anything but satisfactory, and presented all [illegible] of a favorable prognosis with a good degree of certainty, and I consequently suggested to the Magistrate the advisability of taking his deposition.

At the seat of the wound the patient did not complain of much pain when quite at rest; but he had an anxious expression of countenance, with hurried respiration. Pulse 100. There was a short hacking cough, increased on taking deep inspiration, evidently caused by diaphragmatic irritation, and which might at first have been supposed to be pneumonic; but the stethoscope made it tolerably clear that the lung was uninjured. There had been little or no hæmorrhage, and the protrusion of the [illegible], to a certain extent, was a most favorable result of the injury, inasmuch as it completely blocked up the opening, forming a plug which prevented the air entering the peritoneal cavity, and thereby lessening the chance of inflammation. As the patient had been a good deal upset by the shaking of the doolie, I deemed it advisable to get him a good night's rest, and ordered gr. ¼ of morphia to be given directly, [illegible] at bedtime—and a mixture of liquor ammon. acet. 5ss: vini [illegible] 5ss: sod. [illegible] 5ss: aq. camphor ad. 5viii: 5j every [illegible] hours. Diet—milk and arrowroot.

Ist morning, 11th, 7 A.M.—He has passed a [illegible] good night; cough slight; tenderness and pain over the umbilical region on pressure; pulse 100; tongue slightly furred, with red edges and tip; he is thirsty and rather feverish. Repeat mixture: morphia gr. ¼ statim. It now became a question what was to be done with the protruding mass of spleen. To remove it at once would be fatal from hæmorrhage. I therefore determined on ligaturing it by first passing a ligature tightly round, and then crucially over it. 6 p.m.—Repeat morphia gr. ¼, c hydrarg. Chlorid. grs. iss at bedtime.

12*th*, 7 *a. m.*—On the whole, the patient is better; pulse not so inflammatory, 95; edges of tongue less beefy; he has passed a good night; cough less since yesterday; not so much tenderness on pressure over the umbilical region; respiration 21; continue mixture and repeat calomel and morphia pill twice a day. As circulation was still going on in the protruding portion of spleen, I passed another crucial ligature over it, and dressed the wound with lint, dipped in a lotion of liquor potassæ permanganatis.

13*th*, 7 *a.m.*—Appearance around the wound healthy; patient weaker; pulse 100; he passed a good night; repeat mixture and pil ij. ut heri. A little soup to be given.

14th, 7 *a. m.*—Improving: bowels moved, repeat medicines. 5-30 p.m.—Has had fever during the day; complains of thirst; skin hot and dry; pulse 106; respiration 21; has slept during the day, and taken sago and milk; add spts. æther nit. mxv and antim. tart. gr. ⅛ to each dose of mixture; repeat morphia pill at bedtime.

15*th*, 7-30 *a. m.*—Pulse 90; has passed a good night; fever less; skin and tongue moist; no pain, except on tightening the ligature. Repeat mixture and pill. Diet—soup, sago and milk.

16*th*.—Doing well; no bad symptoms; wound looking healthy.

17*th*, 7 *a. m.*—The ligatured part was offensive, and only attached by a small portion, which I divided with a scalpel. The portion of spleen thus removed weighed three and a half ounces. A branch of the splenic artery spouted out, and there was a little oozing of blood. The vessel was twisted, and the oozing stopped by the application of tinct. ferri sesquichloridi and slight pressure. The wound itself looks perfectly healthy, and adhesive inflammation has taken place between the wounded spleen and the sides of the wound opening the abdominal wall, which is a most favorable result. Bowels have been moved. Decoct. cinchonæ ℥j, spt. ammon. aromat mxx, spt. æther sulph. mx; ft. haust. ter die.

Repeat morphia pill (without calomel) twice a day; wound to be strapped.

18*th*, 7 *a. m.*—Has passed a tolerably good night, though the cough is somewhat troublesome and irritable; wound looks healthy; he has no special pain; pulse 100 (probably accelerated by my visit); tongue clean. Ordered a little rice with soup, milk and bread. Continue mixture and pil j.

19*th*.—Morphia gr. ½, pulv. scillæ grs. ii, pulv. ipecac. grs. ii; m. ft. pil,—to be taken morning and evening. Add ℥ii vin. ipecac. to the mixture.

20*th*.—Decidedly improved since yesterday; pulse 80; respiration normal, and cough less; bowels moved. Repeat mixture and pil ii. Continue strapping the wound, which is healthy.

21*st*.—Progressing favorably; discontinue morphia pill in the morning.

22*nd*.—Healthy matter secreted on the surface of wound; continue strapping.

23rd.—Doing well; [illegible] mixture. Ol. jecoris aselli ℥j three times a day.

From this date there was no further alteration in the treatment, [illegible], wound, which was daily closing up. The man continued to improve in health, and the wound entirely healed. He remained in hospital till January 30th, when he was discharged perfectly cured, and apparently none the worse for being minus a portion of his spleen. As the result of this case will be interesting hereafter, I shall continue to keep him under observation for some time.

The Native Doctor carried out all my directions in this case most carefully, especially as to the diet of the patient, and to [illegible], attribute the successful result of the case.

A CASE OF HEPATIC ABSCESS

[illegible] trocar introduced upwards and backwards for a depth of about [illegible] of an abscess in the liver, requiring [illegible] shortened in duration and intensity, and the bulging of the side [illegible] fever at once decreased, and all seemed to go on well; but on the [illegible] which exhausted him very much. A few doses of gallic acid with [illegible]

From that time to the present (20th March), the patient has had neither discharge nor fever. His appetite has returned fairly, [illegible] seem to justify the conclusion that the cavities in the liver have closed; and we may pronounce the case to be one of recovery after abscess in the liver. The wound was daily syringed out carefully, and injected with Condy's solution. The internal treatment chiefly consisted of portwine and quinine in small quantities, and nutrients.

[illegible]

ELEPHANTIASIS OF LABIA MAJORA AND CLITORIS REMOVED BY LIGATURE

[illegible]

kept the vulva always moist, and stained the patient's clothes. General health remarkably good.

After the [illegible] the tumours were excised under the influence of chloroform. First, the large one; then the small one on the left side; and lastly, one of those springing from the clitoris, which was about two and a half inches long. The haemorrhage being pro- [illegible] The loss of blood exhausted the patient greatly, but she [illegible] resorted to, under which she progressed favourably. The large [illegible]

After three weeks, the patient was subjected to a second [illegible] hypertrophied preputium clitoridis, which was completed with very little loss of blood. A week after, she was discharged [illegible]

[illegible]

A [illegible] Abyssinian Field Force, on the Conservancy of Zoola, from the time of the landing of the Advance Brigade until the end of January, has just been placed at the disposal of the Press. As [illegible]

The Editor [illegible]

Notices to Correspondents.

[illegible]

Domestic Occurrences.

BIRTHS.

[illegible]

MARRIAGES.

[illegible]

The Indian Medical Gazette.

H... [illegible] ... MEDICAL GAZETTE ... as possible, and ... ON ONE SIDE ... of the page.

T... [illegible] ... distinct that no possible mistake ... as to proper names.

N... [illegible] ... unnecessarily long.

C... [illegible] ... as concisely as possible, ... [illegible] ... thought.

... [illegible] ... Publishers, Messrs. WYMAN BROS., ... and all professional communications to the Editor, direct.

N... [illegible] ... to the Publishers.

THE CIRCULATION OF THE PROFESSION THROUGHOUT INDIA IS LARGE, AND IS SOUGHT BY

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"... [illegible] ... not of politics, but of ... Among ... [illegible] ... present, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nine- ... [illegible] ... of the persons in which they ... —SIR BENJAMIN BRODIE.

A BURMESE MEDICAL MISSIONARY.

IT will be welcome intelligence to those of our readers who are interested in the progress of Medical Missions in India, to be informed that a youth named Mowng Shaw Loo has recently returned from America, where he went, about ten years ago, to qualify himself as a Medical Missionary, with a view to practising his profession, and preaching Christianity, amongst his countrymen in Burmah. In 1858, young Loo, then a boy of 16, impelled by a love of knowledge and a desire to benefit his countrymen by true religious instruction, and stimulated by Mrs. Ingolls, left the little school in Calcutta where he was being educated, and embarked as a cabin-boy on board a vessel bound for America. There he took service as a gardener, educated himself at the University of Lewisberg in Pennsylvania, and finally, by the assistance of friends and the profits of some lectures on Burmah, took the degrees of B.A. and M.A. there. He subsequently graduated in Medicine at the Medical College of Cleveland, Ohio.

Dr. Loo lately landed in Calcutta from the *Nubia*, on board ... [illegible] ... and where he ... so succeeded in securing the esteem of his fellow passengers, that, before landing, they presented him with a purse of sovereigns, coupled with a testimonial conveying their appreciation ... [illegible] ...

In placing on record this little episode in the history of Burmah, we would express our earnest hope that Dr Loo's hitherto successful career, pursued in a genuine Christian spirit, ... [illegible] ... ago, by the pioneer Judson; and that whilst he himself, accepted ... [illegible] ... proclaiming glad tidings to the three millions of his country- ... their benighted Mowrs. If he ... [illegible] ... of the Burmese, we should ... better examples of perseverance and industry in attaining the object of an honorable ambition have been shown among the ranks of our own, or of any other, profession.

A PLEA FOR HAKEEMS.

On perusing lately the census returns of the North-Western Provinces, we were deeply interested, and strongly impressed, by that part of the returns which gave information as to the number of hakeems and baids in the different districts of that Government. From this we gather that there are 7,000 practitioners of medicine and surgery in that division of the country, giving a proportion of one medical man to every 4,285 of the general population.

This is quite irrespective of Government employès, who are European Officers, supplemented and assisted by Sub-Assistant Surgeons and Native Doctors educated entirely on the European system. These, taken together, are, comparatively speaking, very few in number, and widely separated in their medical creed and practice from the bäeds and hakeems, with whom they have the least possible intercourse and sympathy. The numbers of native, or, as they may be called, indigenous medical practitioners, are, according to the census, very unequally distributed among the different districts. This probably arises from the fact that many of the hakeems follow other occupations than the art of healing, and in some districts have chosen to be returned according to these different employments. In other districts again, the descendants of hakeems, though not practising at all, have sought to be returned under the distinctive title of hakeem or bäed, and thereby swelled the list inordinately and incorrectly.

Be this as it may, the number of medical practitioners is large in every district, and they form an important body in the community among whom they live. Under native dynasties, past and present, members of the profession have occupied many of the highest positions, both social and political. In native society, all over the country, these men still hold their own, and are greatly respected, ministering as they do to the troubles of both body and mind of the people, and generally possessed of a superior education.

Under British rule, however, they have disappeared altogether from political life, and socially have little or no standing in European society, where they are virtually ignored.

To understand this difference in the estimation in which they are held by these two classes, it must be remembered that the European is brought up to have confidence in medical men trained on what may be styled the scientific practice of medicine, and refuses to believe in the purely Asiatic system, which is a compound of traditionary practice with a large admixture of superstitious omens, lucky days, and religious ceremonies of a fantastic or idolatrous character. To the unenlightened portion of the community, which comprises all but a fraction of the population, these adjuncts to medical treatment are as yet essential, for without their employment there would not be that ... [illegible] ... This superstitious belief is nothing new or peculiar to India, ... [illegible] ...

imbibed with the teaching of a purer faith. This will necessitate an alteration in medical teaching and practice, for educated India cannot continue to fool or be fooled with incantations and charms when life and limb are in danger, and pain or sickness need urgent relief.

In this state of matters, then, is it best to leave the profession of medicine in India alone, till an educated demand on the part [illegible] improvement in medical education, or, by influencing the existing class of Hakeems, to attempt to anticipate the want by affording facilities of acquiring modern information, and by encour[illegible] of the letting alone view of the matter, particularly as it is recommended by the saving of trouble. Besides, "letting alone" would almost certainly be most agreeable also to those more particularly interested, for few things are more distasteful to our native friends than changes in customs and regulations, especially when the new mould is to be fashioned after [illegible]

It may be said that, in our medical schools, Government is training up a class of men who, by their example and teach[illegible] true in time, though there is as yet little or no sign of such an effect. To understand this, it must be remembered that there are only four medical schools in the whole of this Presidency, [illegible] standing. In addition, these students are not drawn from the race of hereditary hakeems, but from the sons of Government employés, &c., and study medicine that they may enter the Government service. They thus in no way seek to compete with ordinary hakeems, and have not the hereditary respect of the people which these enjoy. As a rule, too, they are satisfied with their Government pay, and are seldom inclined to exert themselves in striving for private practice. Limited in numbers too, being only a few hundreds in each province, they are of little, if any, use in carrying out those sanitary improvements contemplated by Government. Recourse must therefore be had to the thousands composing the hereditary medical class of the country, if any general and suitable schemes of sanitation are to be effectually carried [illegible]

other information as the Government requires.

Their primary want is that of a scientific nomenclature of [illegible] expect these thousands of men to leave their practice, their [illegible] Calcutta, Agra, and Lahore, to learn European medical language [illegible]

Local Governments and authorities may, however, do a great deal in this good cause. They can encourage hakeems and bards to inform themselves by one means or another on the subject of nomenclature, and give them such appointments connected with statistics of population, disease, and death, as may be required for sanitary purposes.

A [illegible] by physicians and surgeons in all European nations. To these guilds the recognition of Government could be vouchsafed, as in Europe, by acknowledging their diplomas and granting certain privileges to members, which would induce the latter to join and foster these associations. Almost the only privilege granted in England, which would be appreciated at present in India, is that of allowing members of these guilds (called Colleges of Physicians and Surgeons) to recover fair remuneration for medical attendance, through Courts of Law. This privilege is denied to all others who practise medicine without diplomas from these guilds.

[illegible] to render himself independent of the Civil Court, by making his contract with the sick person or his friend before undertaking [illegible] agreed to before commencing, and additional sums during the sickness. This is a vicious system, which the professional man and the people generally would no doubt gladly forego. At present, if there is a written contract, the hakeem may sue successfully, and in some rare instances the Magistrate will listen [illegible] remuneration. In other instances, the Magistrate (and this is the rule) throws the case out of Court at once, as one not worthy to be heard. This keeps up the system above alluded to, and pre[illegible] be comparatively very rare, but the fact that a member of a [illegible] certainly encourage the establishment of such associations.

It would be wise to enrol all hakeems who signified their readiness to join, and to register them in each district, granting a stamped certificate or diploma; and that general support might be obtained, no examination should be required or fee charged from those first enrolled. The only qualification needed should be that the man is recognised as a medical practitioner by the people of the district.

After the formation of the guild, it should be enacted that none should be admitted in future who could not pass an [illegible] the guild. These would practise among the people as now, and no doubt with more knowledge and authority than at present. For those hakeems, again, who chose to acquire a knowledge [illegible]

appointed by Government, would preside at the examination, and sign the certificate of attainments. By this means, it is probable that a far superior race of young men, sons of hakeems, would come forward for local Government or Municipal employ, and an impetus be given to the *indigenous* practitioner to acquaint himself with European science. He would of course get this most effectually at the present Medical Colleges, which must be kept up, in any case, to supply the Government service as at present.

Some may think that, in thus encouraging native hakeems and baeds, assistance is being given to the propagation of error; but it cannot be said that our plan of leaving them unassisted for the last century has done anything to benefit them or the country. We have indeed attempted for medicine what has failed with the masses of the people, *viz.*, the giving a very high European education to a few, hoping thereby to reach the masses. This plan has miserably failed; and now that education is being extended to the masses, let us try some means by which the many thousands of hakeems may be reached and gradually benefited. European Surgeons would do well to acquaint themselves with the books used by the hakeems and baeds in their neighbourhood, for without a knowledge of these, they can with difficulty influence the native practitioner for good.

We may confidently predict that if something of the kind proposed is carried out, we may see much good as the result, and that, in place of the present double system of medicine practised in India, we will have Western science engrafted on Eastern customs and requirements, the fusion of the two being far more in accordance with the wants and wishes of the people than either system separately.

Space forbids our enlarging more on this deeply interesting subject, but we cannot resist recommending it to the consideration of Civil Surgeons and Civil Officers generally. In their hands lies the power of gradually effecting a vast reform in Indian medicine, and in time benefiting the world at large, by adding to its stores of medical science the experience of the acute observers of disease in India.

"AIDE-MEMOIRE," &c., FOR INDIA.

In his recent "Report on the Jails of the Lower Provinces," Dr. F. J. Mouat has very judiciously suggested the annual preparation of an Indian Medical "Aide-Memoire" for the special use of medical officers fresh from Europe. He advises that it should be "similar in form and character to the annual volume published by the Director General of the Army Medical Department in England, but free from all extraneous matter, and as condensed as such a record can be rendered, without diminishing its practical value. It should exhibit every form and variety of tropical disease likely to be met with, as to locality, season of occurrence, type, mode of treatment, &c., &c. It should be illustrated by a carefully-prepared map, or disease-chart, showing clearly the habitats of different diseases, such as cholera localities, fever spots," &c.

The suggestion is an admirable one, and well worthy the attention of the Government. It is notorious that, at present, a young medical officer, recently arrived in India, goes both to his duties in the country but very imperfectly acquainted with tropical disease. *Some* acquaintance will have been acquired by the Assistant Surgeon who has had the advantage of going through a course at Netley; but even *he* will only have been, *to a certain extent*, familiarized with the chronic forms of disease. Of acute disease he knows nothing; and yet it is with this that he is more frequently called to do battle. To the lamentable deficiencies of many who have been brought for the first time face to face with serious disease, how many of us who have lived long in India can testify. An Indian "Aide-Memoire" would undoubtedly help to inspire the new-comer with confidence; whilst, as an *annual* volume, and *illustrated annually*, as Dr. Mouat suggests, (to show the intensity or otherwise of disease in various years,) it would be a document of inestimable value to practical physicians, to sanitary reformers, and the public generally. To epidemiological societies, in whose hands it would receive its maximum of development, it would be a great boon, for there is probably no finer field for the study of epidemic and endemic disease than India. But, to ensure its success, the preparation of such a volume should be confided to a medical officer endowed with special aptitude for the work.

And here we take leave to remark, *en passant*, upon the vast importance of the Head of the Medical Department being furnished with every medical report, and every medical publication of State importance which issues from the press, not only in this country, but in others. Dr. Mouat alludes to the difficulty which he, the "head of a department in which sanitary questions are continually arising," had in obtaining a copy of the Bengal Sanitary Commissioner's Report for 1865, "which is already out of print!" It would be well if, in addition to every report and publication in India, (which should be sent to the Principal Inspector General's Office as a matter of course,) the authorities in England would cause to be sent to it also whatever of public interest was published at home or abroad. We would name, for example, the forthcoming works on the subject of "Army Hospital Transport" by Professor Longmore of Netley, and Professor Gurlt of Berlin, both being brought out under Government authority.

Before leaving the subject of the "Aide-Memoire," we would refer to the large relief map in use at Netley. On this map the different military sites in India are pourtrayed in relief, with the strength of the military force stationed at each. There are at present only two of these maps in existence,—one at the India Office, the other at Netley; and their cost is £50 each. Such a map (on which we would recommend the introduction of disease spots) is very useful for purposes of instruction; and we should be glad to see it introduced into the Medical Colleges in this country. Hereafter, the cost will, with increased experience in construction, and increased circulation, naturally be reduced.

But, after all, an "Aide-Memoire," however well illustrated, gives *book* knowledge only. What we should like to see introduced into our educational system is *clinical instruction* in one of our large metropolitan hospitals in India. In days gone by, a young medical officer had opportunities of becoming acquainted with tropical disease at the General Hospital, (to which he was often attached for a few weeks or more), in connexion with an [illegible] G. O. G. G. in C., dated 19th July, 1822, or whilst doing

when all chances of recovery are past. In this hospital ample

acquiring the native languages. We are aware that the paucity

educated doctor than none at all. The subject, however, is

SUBURBAN HOSPITALS.

We are

which recently formed the subject of one of our editorials, is

From the report submitted by the Secretary, Dr. Naylor, to the

ultimo, it appears that the monthly expenditure exceeds the income derived from subscriptions by Rs. 265, which sum has

twelve

ed by the Secretary, in his report, that the hospital should be

hospital capable of holding 50 sick. The expense of erecting such

month, "but the whole, or the greater portion, of this sum

last sentence is borne out by the experience of the past twelve months, the monthly subscriptions having proved altogether insufficient to defray the current expenditure.

Dr. Naylor's proposal was not acceded to at the meeting on

more liberal subscriptions. We certainly think that such an institution as the North Suburban Hospital, which is, with the exception of the Chitpoor Dispensary, the only provision for the sick-poor of an extensive and populous district, upwards of two miles distant from any other hospital, has a strong claim, not only on the Suburban Municipality, but on that of Calcutta. It unfortunately happens that, while the city and its suburbs extend eight or nine miles from north to south, the Chandni, the Medical College Hospital, and the Scalda Native Hospital, the only three institutions into which natives are admitted, are all situated within a mile of each other. The North Suburban Dispensary, we believe, is extremely the great want of accommodation for the sick in the outlying portions of the town, and we are therefore glad to hear that an effort is to be made to awaken public sympathy on its behalf, even though the

on its present unsatisfactory footing, for a few months longer than would otherwise be possible. We trust, however, that, among the many wealthy native gentlemen who reside in the neighbourhood, a sufficiently large sum will be raised *at once* to justify the Committee in applying for a site, and in commencing the erection of a building suitable for the purposes of an hospital. As we have said before, nothing can be less so than the house now occupied. We are certain that, were the erection of the building once commenced in earnest, many subscribers would come forward cheerfully, who now keep aloof, feeling that their contributions cannot, in the bankrupt state of the present hospital, be allowed to accumulate as the nucleus of a building

the erection of the building, they can claim, with even greater justice than they can now, a right to have the current expenses of the institution borne, wholly or mainly, by the general public.

But private munificence, however actively exercised, can hardly supply properly the want of hospital accommodation in the suburbs of Calcutta. Fifty beds, the number which Dr. Naylor proposes to maintain in the new hospital, will be but a very small number, compared with the population of the sur-

Howra is what we would like to see at Chitpoor; and even it would hardly be large enough for the demands likely to be made

sick, not of mere refuges for the poor, like the Scalda Hospital.

suburbs. Ballygunj, Bhawanipoor, Coolie Bazar, and Kidderpoor are all destitute of hospital accommodation, and sick from those localities have to travel nearly three miles, sometimes

Suburban Hospital is as badly required as a Northern one, or

for the use of seafaring men, fishermen, &c., and a second for

Meeting of the Bengal Branch of the British Medical Association.

The Fifth Annual Business Meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College at 4 P.M. on Wednesday, the 5th February, 1868. Dr. Chuckerbutty, President, in the Chair.

The Treasurer, Baboo Kanhay Lall Dey, proceeded to read the following Financial Statement:—

Financial Statement of the Bengal Branch of the British Medical Association for 1867.

	Rs.	A.	P.
Balance of last account brought forward	650	7	6
Receipts.			
Received subscriptions for the Bengal Medical Association from Members and Fellows	171	0	0
Total Rupees	821	7	6
Deduct Rupees 87 Annas 8 Pies, sent by drafts on Messrs. Grindlay & Co., London, for the payment of Subscriptions for 1867, and Donations to the Journal of the Association	87	8	0
Rupees	733	15	6
Received subscriptions for the British Medical Association from Members and Fellows	22	0	0
Rupees	755	15	6

Disbursements.	Rs.	A.	P.
Stationery.			
Amount paid for purchase of stationery	14	11	0
Printing Charges.			
Amount paid for printing ...	233	0	0
Lighting Charges.			
Amount paid for purchase of candles, &c. ...	102	1	0
Postage.			
Amount paid for postage stamps ...	...	12	0
Petty Contingencies.			
Amount paid for cooke hire and other petty charges ...	31	8	0
Establishment Charges.			
Amount paid for salary to Establishment	276	0	0
British Medical Association.			
Amount sent to England ...	209	0	0
By Balance.			
Cash in hand ...	...	...	...
Total Rupees ...	755	15	6
E. & O. E.			

KANHAY LALL DEY,
Honorary Treasurer.

Adopted.

S. G. CHUCKERBUTTY, M.D.,
President.

Dr. Ewart asked whether the accounts had been audited, as it was decided at the last meeting that they should be audited in future by the Auditor, whether the accounts audited, the Treasurer would be saved from a heavy and unnecessary responsibility.

Dr. Chuckerbutty replied that no audit of the accounts had been held.

Proposed by Dr. Kenneth B. Stuart, seconded by Dr. Juggobundo Bose, and carried unanimously, that the Treasurer's Report for the year 1867 be passed, and that an Auditor for the year 1868-69 be appointed at this meeting.

The following gentlemen were elected unanimously as Office Bearers for the year:—

President.—Dr. Norman Chevers, proposed by Dr. Ewart, seconded by Dr. Colles unanimously.

Vice-Presidents.—Dr. Francis, proposed by Dr. Colles, seconded by Baboo Kanhay Lall Dey.

Dr. Ewart, proposed by Dr. Chuckerbutty, seconded by Dr. Juggobundo Bose.

Dr. Juggobundo Bose, proposed by Baboo Dwarka Nath Mookerjee, seconded by Baboo Kashi Kinker Mitter.

Secretaries.—Dr. Colles and Baboo Dwarka Nath Mookerjee, proposed by Dr. Chuckerbutty, seconded by Dr. Juggobundo Bose.

Treasurer.—Baboo Kanhay Lall Dey, proposed by Dr. Chuckerbutty, seconded by Dr. Chevers.

Council.—Dr. Kenneth B. Stuart, proposed by Dr. Chevers, seconded by Dr. Chuckerbutty.

Moulavi Tamooz Khan, proposed by Dr. Juggobundo Bose, seconded by Dr. Chuckerbutty.

Dr. W. K. Waller, proposed by Dr. Chevers, seconded by Dr. Ewart.

Dr. T. E. Charles, proposed by Dr. Ewart, seconded by Dr. Colles.

Baboo Kashi Kinker Mitter, proposed by Baboo Kanhay Lall Dey, seconded by Baboo Lakhmi Narain Bose.

The President, the Ex-Presidents, and other Vice-Presidents, the Secretaries, and the Treasurer are *Ex-officio* Members of Council.

Proposed by Dr. Ewart, seconded by Dr. Chuckerbutty, and carried unanimously,—"That Dr. C. R. Francis, on his return to Calcutta, be requested to undertake the duty of Auditor for the year 1868-69."

Proposed by Dr. Chuckerbutty, seconded by Dr. K. B. Stuart, and carried unanimously,—"That the Secretaries be directed to prepare a new form of application for the payment of overdue subscriptions, and to submit the same to the Branch at its next meeting."

Dr. Ewart proposed the following addition to the Bye-laws of the Branch —

"No paper on any abstract subject shall be read at any meeting of this Branch of the British Medical Association which has not been submitted to the Council at least fourteen days before such meeting; and it shall be the duty of the Secretaries to specify the subjects of such papers upon the notices of such meeting issued to members. Accounts of detached cases, and of recent pathological specimens, not to be subject to this rule."

The question whether the meeting was competent to enact fresh bye-laws, of which notice had not been given at a previous meeting, having been referred to the President, was decided by him in the affirmative, inasmuch as the Bye-law referred to the alteration or annulling of existing bye-laws, but not to the enactment of new ones.

Dr. Chevers having seconded Dr. Ewart's proposal, it was put to the vote, and carried unanimously.

The following gentlemen then agreed to read papers at the ensuing annual meeting —

Dr. Ewart (Address in Medicine), Dr. Juggobundo Bose, and Baboo Dwarka Nath Mookerjee.

On the proposal of Dr. Ewart, seconded by Dr. Colles, Tuesday, the 10th March, 1868, was appointed as the day for the next annual meeting of the Branch.

Votes of thanks to the President and Office Bearers of the past year, and to the Editor of the *Indian Medical Gazette*, having been recorded, the meeting was closed at 5-30 P. M.

The usual monthly meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College on Tuesday, the 11th February, 1868, at 8-30 P. M. Dr. S. G. Chuckerbutty, President, in the Chair.

Proceedings of last meeting read and confirmed.

Dr. Chevers asked whether, in the opinion of any of the members present at the last meeting, phthisis had really increased in frequency, in India, of late years. He himself thought that the inhabitants of pucka houses were the most frequent subjects of the disease.

Dr. Chuckerbutty considered that phthisis was only better known. It is most common in this country among the descendants of the early Portuguese settlers and among Native Christians generally, next among Hindoos and Eurasians, and last among Jews and Musalmans, who appeared to suffer comparatively less from it, or at least seldom sunk under it.

Dr. Juggobundo Bose said that, in his experience, phthisis was common among the descendants of the Portuguese colony at Goa.

Dr. Beatson believed that the increase of phthisis in India was more apparent than real. The course of the disease was not the same here as in Europe. In India death was caused rather by inanition than by destruction of the lung-structure

already suffering from it when they arrive in this country, such

exceptions to it.

Chunder Chatterjee.

in compiling an Indian Pharmacopœia; and he urged the im-

Dr. Colles exhibited portions of the left ventricle, from a man who had been poisoned with arsenic, in which the sub-endocardial ecchymoses, described by Dr. Bonavia of Lucknow, were well marked. The specimen was forwarded by Dr. G. D.

ised by maceration in spirit for three weeks, it still showed the ecchymoses distinctly.

A discussion upon this specimen followed, in which Drs. Cheyers, Charles, and Chuckerbutty took part. Dr. Charles stated that sub-endocardial ecchymoses (not mere staining) asphyxia. In such cases he had seen the left ventricle affected.

Dr. Chuckerbutty said that staining of the endocardium, without ecchymosis, was often seen in low types of fever and

were rare in cases of pulmonary apoplexy following heart disease, and also in cases of heat asphyxia. Further informa-

its presence could be inferred before death, was much to be

would appear, in the left ventricle.

ventricle might arise from straining of the tissue of the latter, owing to its efforts to contract while imperfectly filled with blood.

the Chair.

Royal Correspondence.

THE JEYPOOR MEDICAL SCHOOL.

Sir,—In the last number of the *Indian Medical Gazette* there is an article headed "Progress in Jeypoor," in which you

been, as, so far as I am aware, no idea has at present been entertained for the abolition of the "Maternity Charity."

As my name has been mentioned by you, in connection with the abolition of the School, in such a manner as is calculated to mislead those who are not "well acquainted with Jeypoor, and with the Medical Institutions founded there by the present

giving me an opportunity for correcting the errors into which

that I would have used the influence that I possessed "in preventing the abolition of the Medical Institutions, in strengthening, instead of weakening, the hands of Dr. Burr," that

teaching with Dr. Burr; and that the cause of medical education in the Jeypoor territories would have been more warmly supported than ever;" and then you add:—"We fear that we have been mistaken. The Medical Institutions are abolished to

Now, Sir, in point of fact, you had not been mistaken in

teaching with Dr Burr in the Medical School, and had made

when circumstances occurred which made more than myself deplored, and which not only prevented me from delivering them,

in *all* his schemes which I had hoped to be able to do.

For months prior to the receipt by the Durbar of the letter from the Governor-General in Council, in which the abolition of the Jeypoor Medical School was first hinted at, I had, along with several others, been engaged in drawing up a scheme for the consolidation of, not only the Medical School, but of *all* the educational institutions of the Raj, increasing their numbers, and greatly extending their usefulness.

The communication from the Governor-General in Council to which I have referred was received by the Durbar during

after my return that I was informed of the circumstance. There and then I strongly disapproved of the step, and argued that even although the school, after six or seven years' existence, and at a cost to the Raj of Rs. 50,000, had only sent out seven native doctors, yet, rather than altogether undo the work of so many years, the school, if necessary, should now be placed upon

and such were the views I invariably expressed whenever the subject was discussed in my presence. Therefore, Sir, I am at a loss to understand how you could possibly say that "no one who has influence with the Maharajah speaks a word in their behalf."

Your correspondent "Observator" (whom *I* should be very sorry "to believe is well acquainted with Jeypoor and the Medical Institutions established by Dr. Burr") says he has read (where?) that the "Medical School and Maternity Charity are addressing himself to what he considered a more important educational object, being the establishment of a School of Arts."

It is not within the province of this communication to enter into the reasons, numerous and most worthy of consideration as they are, that induced the Governor-General in Council, the members of the "old Mussulbut," the members of the "new Royal Council," and His Highness the Maharajah, to recommend and decide on the abolition of the Medical School. But

reason a most consistent interpretation to many of the other very remarkable statements contained in his letter.

I remain, yours truly,
COLIN C. VALENTINE.

Camp Shoeawatty, *March* 20*th*.

Review.

An Enquiry into the Suitableness of certain Articles of Army Hospital Equipment for India. By Surgeon-Major CHARLES R. FRANCIS, M. B., London, *H. M.'s Indian Army, Bengal.*

Important as the subject of transport for the wounded on field service is, especially in India, it is strange that no official measures were taken by the India Office at home to procure models of the most recent improvements in this department, while the International Exhibition was going on at Paris. Early in 1867 the Supreme Government applied to the Secretary of State, requesting that models or drawings of the best means of transport for wounded men might be sent out to India; but no attention whatever seems to have been paid to the application. The duty of collecting information on the subject for the use of the Supreme Government was voluntarily assumed by Dr. Francis, and the results of his observations are given in the pamphlet before us. In it the articles which Dr. Francis has considered capable of being advantageously used in Indian warfare are described in detail, and, with few exceptions, illustrated. The principal articles are an ambulance —a doolie, made considerably lighter than that now in use, and intended to be borne by only two, instead of by four, men—and a light stretcher, for use more immediately under fire. In addition to these, Dr. Francis recommends the introduction of Collineau's havresac and companion, as being lighter than those supplied to the British Army, and better suited for hill warfare.

The ambulance recommended by Dr. Francis is a modification of the Italian model, and is intended to carry fourteen wounded men, all seated, besides the driver and two attendants; and is provided with a sufficient stock of medicines, food, water, &c., to render the inmates independent of other accommodation for two or three days. The doolie is so reduced in width as not to weigh above 30 lbs., instead of nearly 60, the weight of those issued to the army of China in 1860. The roof has been simplified, and is arched, instead of being flat, and two light parallel poles, like those used in the Bareilly "dandi," are provided, instead of a single heavy one. Dr. Francis also advises the supplying, to each field hospital, of a number of "Shortell's wheels," a pair of which can be readily attached to a doolie or stretcher, so as to convert it into a wheelbarrow, capable of being managed by one person.

It is to be hoped that Government will not allow Dr. Francis's valuable suggestions to be simply shelved, but will appoint a Committee of Officers, having a practical knowledge of the subject, to report upon the models and drawings which he has had executed, and to decide what further modifications, if any, can be advantageously made in them. Dr. Francis himself has employed his furlough at home to good purpose by directing attention to this subject, in which India, (relying perhaps too much upon the universal doolie, which, where expense and the number of camp-followers are not considered, is certainly the very best conveyance for a wounded man) is so far behind the rest of the world.

Short Notices of Recent Books.

The Variation of Animals and Plants under Domestication. By CHARLES DARWIN, M.A., F.R.S. 2 vols. London: Murray. 1868.

The latest sensation in the world of publications is Mr. [illegible] first instalment of [illegible]

[illegible] Mr. Darwin's [illegible] Mr. Darwin [illegible] [illegible] [illegible]

demands of modern teachers. This, however, the author has

sists, 408 contain matter admittedly based on the old system, the remaining 64 pages, which form the second part, being devoted to

is therefore, in our opinion, most objectionable, and we

character of the author's earlier scientific treatises. We cannot

to be acquainted with modern views and theories.

By

Chevasse. 1868.

This admirable essay, which received the Jacksonian prize in

monograph on a disease of a most serious and by no means unfre-

ought to be. The changes which distinguish the present from the second edition, though not very numerous, are sufficiently important, while at the same time they have not involved an

to the practitioner. Sir Henry Thompson, in preparing the present issue, has added here and there the results of his more recent experience in the treatment of prostatic disease; and the new matter which he has introduced, he has allowed to take the

of the Prostate will be read with interest by physiologists, who, however, will be disposed to doubt the advantage of the

distilled water is employed as a medium, rather than glycerine or any of the other fluids in vogue among histologists. The author deals so fully and so fairly with the writings of those who are also distinguished for their knowledge of the subject, that his book is of equal value as a handbook for the operator, and a work of reference for the surgeon desirous of becoming

By

Consulting Surgeon to the Hospital.

Stone here gives us a useful practical treatise on the subject of calculi. His aim is to show that, while almost all calculi may be satisfactorily removed by lithotrity, calculus itself is of all surgical affections the one, *par excellence*, in which, if taken at a sufficiently early stage, preventive measures are most effective.

to his own conclusion. Without condemning lithotomy, whose importance in certain cases he fully recognises, the author evidently leans toward the "crushing" operation as productive of the best results. While he discusses very fully the scientific aspects of his subject, Mr. Coulson is eminently practical, and to

and, in any case, they merit careful consideration.

D.

servations on guinea-worm and the experience of scientific and

which, to those who care to know the history of the guinea-worm, will prove a profitable reading.

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, February 15th, 1868.

strong feeling and unpleasant controversy. The circumstances

Accoucheur, and Physician to the British Lying-in Hospital, has been called upon by the body of Governors of that Institution for his resignation. The cause of this step, whether directly or indirectly it is hard to say, has been an objection raised by Dr. Eastlake to the habit of interfering with his patients, which was indulged by certain strong-minded women connected with

Dr. Eastlake's absence, to attempt the delivery of a child by means of forceps,—a step which Dr. Eastlake had previously opposed when suggested to him. The result of this attempt at instrumental delivery was, that the position of the head of the child was changed, and the labor thereby considerably protracted; so

was unfavorable to Dr. Eastlake. The question arises—Why? Dr. Eastlake thus answers it. Any one can become a member of the Board, and can forthwith vote on questions of administration,

of by the ladies of the Medical College, who, immediately it was known that one of their pupils was placed in a difficulty, became Governors. Dr. Eastlake, in the interval between the first and second meetings of the Board, received a letter from a Dr. Edmunds, the Manager of the "Ladies' Medical College," asking him whether he was favorable to the proposed alliance of the Ladies' Medical College to the Hospital, and answered it in the

last drop in the cup of vengeance. A coalition was formed; Dr.

compelled to send in his resignation. Now, admitting that there

the treatment he has received deserves the censure of the profession; for, after all, it is not he who has exceeded his duties. To my mind, I confess, the whole matter looks very much like a shameful piece of oppression, and a gross violation of the commonest principles of justice.

The contest for the Coronership for Western Middlesex is not yet at an end; and I am sorry to say it is between two mem-

employment of Parliamentary agents, the purchase of public-houses, and the posting of enormous placards informing the indifferent freeholders as to the respective merits of the candi-

over two thousand pounds upon his canvas; and it is stated that

time the poll is declared, a few days hence, the sum will, in each case, have risen far beyond the amounts mentioned; and yet all this money is given for a post with grave and onerous duties, and whose nett salary does not amount to more than £350 per annum. Curiously enough, each of the rivals is confident of

matters is that success lies with him who has the longest purse. If it be so, then Dr. Diplock will be the favorite, for he seeks the post merely for the pleasure (!) of the duties, having lately retired from practice with a large fortune. There is a moral to

into its own hands, and not allow the presiding justice of one

It is currently reported that Inspector General Mouat intends to resign. The reason given is that he feels unable to take another tour of duty in India. It is said that he will be succeeded by Dr. Dane, the senior in the list of Deputy Inspectors General of Army Hospitals, and who is now at the Cape of Good Hope.

Professor Huxley has commenced a course of lectures at the Royal College of Surgeons, on the Anatomy and Physiology of the Invertebrate Animals, which is being well attended. It is so long since the School of Mines Professor gave a course of public lectures on this subject, that the expression of his views is looked forward to by biologists with a small amount of interest. The facility with which Mr. Huxley devotes himself within short intervals to very different problems in natural science is not the least remarkable of his mental qualities. It was only on Friday night last that he gave a lecture to a most fashionable audience at the Royal Institution. His subject was "The Connecting Links between Reptiles and Birds," and his lecture was both attractive in delivery and startling in some of the analogies demonstrated by the lecturer. Taking the Iguanodon Comsognathus and Archæoptery as examples, he threw quite a new light on the restoration of the first and second, which he proved, as it was inductive proof could go, to be the unquestionable connecting links between birds and reptiles.

The appointments in Charing Cross Hospital have turned out as I think I anticipated in my last letter. Dr. Shaw has been elected to the chair of Physiology, and the post of Pathologist has been given to Dr. Henry Green, a distinguished pupil of Virchow and Kühne. The office of Assistant Physician, vacant by the resignation of Dr. Chowne, will be given without opposition to Dr. Alexander Silvers. Dr. Henry Lawson has been elected to the Assistant Physicianship at St. Mary's Hospital, which was recently vacated by Dr. Markham, whose duties as Poor-law Inspector are too numerous to admit of his holding an hospital appointment.

There is at last a promise that the new nomenclature of diseases, which the Committee of the College of Physicians have been for ten years preparing, will soon be published. Let us hope that the news is true. The synonyms will be given in French, German, Italian, and Latin.

A number of enthusiastic hippophagists have been making a move to introduce horse-flesh into this country as an article of diet. A dinner was given at the Langham Hotel the other day, at which nearly a hundred and fifty guests sat down. All the dishes, *pièces de résistance, entrées*, soups, &c., were from the horse, and horse alone, and the result seemed to be eminently satisfactory to the majority. I doubt, nevertheless, that the custom is likely to become popular here; and in the event of its becoming popular, I doubt its advantage; for the demand for horse-flesh would soon raise the price, and it could never compete with that of the ox, which is more easily reared, and more rapidly fattened. The flesh is certainly not so palatable as even medium beef; but it is eatable, though it leaves a peculiarly harsh taste upon the mouth for hours after it has been eaten. However, *chacun a son goût*, and fashion is so capricious that the *goût* for horse-flesh *may* become general. *Credat Judæus Apella non ego.*

We have lost one of our most illustrious *savants*, a man whose name is known wherever science lives, and whose years were spent in the study and investigation of natural phenomena. Sir David Brewster has been gathered to his fathers, and physical science has lost its greatest luminary. Brewster's name is familiar to all as the inventor of two of our most interesting scientific toys—the kaleidoscope and the stereoscope. He may be said to have been one of the first to recognise the important principles upon which the spectroscope of Bunsen and Kirchoff is based; but the discovery of this important instrument of research cannot be attributed, as some of our daily papers have attributed it, to the Scotch physicist. Sir David's optical enquiries are among his ablest and most valuable researches, and his memoir on the structure of the crystalline lens had a high merit in its day. He had reached the ripe age of 87, and was originally intended by his parents for the Church. I have also, ere leaving my obituary, to announce to you the death of the elder Herapath, the Toxicologist, whose name your readers will remember in association with the Palmer trial; and also that of M. Serres, the great French Comparative Osteologist, whose memoirs on the extinct Mesotherium have so elaborately detailed the character of that extraordinary fossil mammal.

Last, though not least, I must say a word about universities. The graduates of the London University are still divided as to the candidate whom they should support. One party is favorably disposed towards Mr. Lowe, and an equally large faction mean to support Sir John Lubbock. Both candidates are highly qualified as representatives of so distinguished a body of graduates as that of the London University, and the University is pretty much in the position of the gentleman in the "Beggar's Opera" (!) who could be so "happy with either were t'other dear charmer away." The question of the Irish Universities is *sub-judice*, but no one even guesses the result. There are three parties,—one in favor of a National University, one in favor of a Roman Catholic University, and a third in favor of supporting the Queen's University. I don't envy this Government the task of selecting between the three.

The Progress of the Medical and Collateral Sciences.

A new Magneto-electric machine has been invented by Mr. Browning, of the Minories, London, which promises to be of some service in electro-therapeutics. Our readers are aware that the mode of obtaining an induction current from a revolving magnet is different from that in which the primary current is produced by a galvanic cell containing a pair of plates. In the first method the currents produced are being constantly reversed; in the second the currents are usually in one direction. The magnetic machine is, however, very frequently used by medical men in the treatment of lead palsy and other forms of paralysis, the reason for its use being its cleanliness, and the fact that the currents are produced by simply turning round the handle of the instrument. But since Remak and others have shown that the influence of constantly-reversed currents is different from that of a current constantly in one direction, the contrivance which Mr. Browning has devised promises to be of service. We hope to be able to describe the instrument in detail on a future occasion; but for the present we will confine ourselves to stating that but one bobbin is employed in the apparatus, the magnet being bent into a circle. Electricians will understand from this why the currents are always in the one direction.

The Microscope in Toxicology.—The last number of the *Microscopical Journal* contains a most valuable contribution to the science of medical jurisprudence by Dr. Guy, of King's College, London. The paper to which we refer is upon the subject of microscopic sublimates; and it shows how important is the assistance to be gained in medico-legal investigations by the employment of the microscope. Dr. Guy gives numerous illustrations drawn from photographs; so that the student need have no difficulty in "making up" the subject. The method of procedure is as follows:—Take, for instance, strychnine. The [illegible] part of a grain is placed on a clean porcelain slab, within a ring of glass about the eighth of an inch thick. Over this ring is placed the piece of glass which is to receive the sublimate, and the slab being then placed on a retort stand, and a lamp applied beneath it, everything is ready. As soon as the heat is applied, a fine white sublimate forms on the glass, and may then be examined; indeed, as many as six distinct specimens may be obtained in this way. The color test may now be tried with the sublimate; and it gives even better results than with the strychnine itself, but the most reliable re-agent is carbazotic acid,—a test which enables us to recognise distinctly the presence of so small a portion of the alkaloid as the [illegible] part of a grain. The sublimate being placed under the microscope, and a drop of carbazotic acid added, a very curious phenomenon presents itself. After a minute or two, a number of circular nucleated greenish-yellow spots appear, and grow rapidly into the most exquisite arborescent forms, or else form a number of peculiar claw-like bodies which are highly characteristic. It would occupy too much space to give further details, but sufficient has been said to show the value of the new method.

The development of the Spermatozoon has been recently investigated by M. Valentin St. George, who also criticises the previous researches on this subject by Herr Schweigger Seidel. M. St. George fully corroborates the view of Kölliker and other histologists, that the zoosperm is in great part a metamorphosed nucleus, but he points out a curious fact in regard to the

every possible precaution to prevent the introduction of

to the boiling point, and subsequently hermetically sealed, she

Entozoon-like bodies in the flesh of Mammals.—During

Lionel Beale to the peculiar structures, first described by Rainey, which are met in the muscles of animals which had died of rinderpest. Recent researches seem to place these bodies

Mauz, who compares them to trichinæ, says that they enter the

other parasites.

The termination of the Nerves.—This point is still one of controversy. The admirable researches of Dr. Beale seem to

nerves form numerous net-works, and do not terminate in abrupt

wise, probably because they have employed such low magnifying power as from 200 to 300 diameters. The latest opponent of Dr. Beale's view of the matter is Signor Trinchese, of Genoa, who holds with Kuhne and others that the nerve ends in a terminal expansion, which, if we remember rightly, Doyere

The preservation of the Syrup of Iodide of Iron.—At a

meeting 5th', Dr Attfield read an interesting paper on this subject, which had been prepared by Mr. T. B. Groves. The author had made several experiments. He found that the syrup kept better when made from iron filings than when made from iron

added a minim of dilute sulphuric acid to the ounce, to another dilute phosphoric acid, and one minim of dilute sulphuric acid, He discovered that the phosphoric acid is the only acid to be relied on, and it should be added before the syrup has cooled.

method of water-analysis, which supplies the following informa-

tion of the organic matter. (3) The nitrates as remnants of organic matter. (4) The nitrites as remnants of organic matter.

three conditions is one full of interest, though extremely diffi-

Respiration in Cattle.—In a memoir presented to the French

proportion of carburetted hydrogen. When, however, the animals were fed entirely on milk, the air expired was the same as that breathed by carnivorous animals. M. Reiset considers

the respiratory products depend very much more on the nature

Impurities in Glycerine.—Glycerine is now so important a feature in the British Pharmacopœia, that the possibility of serious impurities in it becomes a point of some gravity. In a

delphia, states that even distilled glycerine is often very objectionable for medical purposes. He states that the great cause of irritation in glycerine, which has not been properly prepared, is the presence of oxalic and formic acids. The first arises from the action of sulphuric acid on the glycerine, and the second from the reaction of the first. He recommends nitrate of silver

Simple test of the presence of organic impurity in Water.—

to our readers:—Half fill a common water-bottle, cover its mouth with the hand, shake violently for a minute, and apply it to the nose; if no foul smell arises, place the bottle, tightly corked, in a warm place, and if organic matter be present, water will soon develope a very unpleasant smell.

Gallic Acid converted into Tannin.—It has recently been

into tannin by the oxidative production by the addition of nitrate of silver to a salt of gallic acid.

New test for Ozone.—Mr. Leppincott has found that, by

ozone is indicated by the oxidative of the silver, the amount of oxidation being directly as the quantity of ozone present in the atmosphere.

Physiological effect of Quinine.—M. Pasteur presented a paper to the French Academy on the 12th of February, in which he showed that the chief effect of quinine is on the white blood corpuscles, whose movements it completely arrests.

The properties of Vaccine Matter should, according to a memoir recently read by M. Bernard, be attributed to the solid,

The physiological action of Opium Alkaloids forms the

by Herr Baxt. The conclusions arrived at are in accordance with the researches of other and earlier therapeutists. Thebain, like strychnine, produces violent tetanic spasms. Papaverinenets as a narcotic; porphyroxin, which, in small doses, gives rise to numbness and torpor, in larger ones causes tetanic convul-

ORIGINAL COMMUNICATIONS.

A COURSE OF LECTURES ON THE PRINCIPLES AND PRACTICE OF MEDICINE, DELIVERED AT THE MEDICAL COLLEGE OF BENGAL.

BY CHARLES R. FRANCIS, M.B.,
Late Officiating Professor of Medicine, &c., &c., &c.

PART OF AN INTRODUCTORY LECTURE.

MY YOUNG FRIENDS.—There is a portrait in this theatre which [illegible] to you in your country,—not one of those revolutionary [illegible] with [illegible] published and [illegible], but one to be prized with [illegible] blessings in [illegible]. It is an oriental face, but a face which cannot [illegible] to others, how your illustrious Baboo Modoosoodun [illegible] by the possession of those qualities, in the contemplation of which he defied his country's scorn, established that firm basis [illegible] which it is now your proud privilege to enjoy. In the earliest period of time the science of medicine, in India, was of the rudest description. Heaven-born though by the Hindoos it was believed to be, and transmitted [illegible] by Brahma, in one of the sacred writings of the Ayur Veda—the most [illegible] doctrines [illegible] from most fanciful anatomy, physiology, and pathology. More, [illegible] could only be expected of a science based upon an idea which [illegible] that the navel "constituted the root of the human vascular system, radiating to [illegible] vessels, [illegible]." Upon a [illegible] was decided that the [illegible] were [illegible] to convey blood, air, bile, and phlegm to [illegible] parts of the body, and upon [illegible] which maintained that disease depended either upon derangements of one or more [illegible] upon the "influence of gods or evil spirits." [illegible] A [illegible] to a knowledge of the structure of the human frame was obtained by inspecting the bodies of the lower animals. And even these were not carefully dissected. A superficial [illegible] and tissues was effected by [illegible] in water, and by scrubbing the body with a "hard cloth made of bamboo or hair." The skin was thus rubbed off, and the subjacent parts exposed. But to obtain [illegible] in this way, of internal organs, nerves, and blood-vessels, was of course impossible. And [illegible] anatomy, it is evident that their knowledge could have extended very little beyond the bones.

While [illegible] was thus [illegible] in their exercise of the art of healing, was of the feeblest* and most uncertain description, its cultivators in another part of the East were making [illegible] progress. The Greeks were acquainted with Hindoo learning, but they advanced beyond it. [illegible] steadily through the mists of fable, and attained considerable eminence under the guardianship of Chiron, Œsculapius, [illegible]. [illegible] (the reputed son of Apollo) and his two sons Machaon and Podalirius, to Daksha, the preceptor of the two Ashwins, the offspring of the sun, who, after learning the Ayur Veda from their father, became the medical attendants of the gods, is very remarkable. It shews, too, how fabulous was the origin of medicine, both in India and in Greece! Then came philosophy, physics, metaphysics, and anatomy; Pythagoras, Plato, Aristotle. And with them came Hippocrates, that ancient master of our art, whose opinion was respected as the voice of an oracle, the Homer of his profession, and the devoted lover of his country; in the service of which he preferred to die rather than acquire distinction at the court of a foreigner.

Coming down to a later period, we find our science flourishing, after the destruction of the great Alexandrian school, in Arabia, in the hands of its eminent professors, Geber, Rhazes, Albuensis, Avicenna, and others. The doctrines of the Arabian school were introduced into India by her Mahometan conquerors; and these are the doctrines which, with those already promulgated in Hindoo writings in the Ayur Veda, and subsequently in the writings of Charaka, and Susruta the Galen of India, are taught by the Hakeems, and Baids or Koobirajes, of the present day. Later on, we find the art of healing practised by the hands of Romans and Greek slaves. These last, however, practised so clumsily that they were banished.

Then Celsus arose. And now we approach the period when the light of our science was beginning to burn with a brighter lustre than it had ever yet done. In the 14th century, schools of anatomy were founded in Italy, France, and Austria at Bologna, Paris, Montpellier, and Vienna. The art of printing followed in the succeeding century, and then the cloud was gradually rolled back from east to west, and England shared in the glories of the advancing science. Let us pass over the days of barber surgeons, when one of the privileges accorded to a regimental surgeon was, in consideration of his small pay (something like three annas a day), that of being allowed to shave the regiment! Let us tell rather of John Hunter, of Sir Astley Cooper, of Sir Benjamin Brodie, of Trousseau, of Virchow, who, with many others, have, in these later years, led the van in throwing a flood of light upon the arts of medicine and surgery. Thirty-one years ago, Lord William Bentinck, the then Governor General of India, was anxious that *you* should share in the advance which these sciences had made in Europe: and the Medical College of Bengal was founded. Baboo Modoosoodun Goopta nobly stepped forward, and aided the good work by leading the way in the prosecution of anatomical studies in the dissecting room. There were many who, in those early days of our college, doubted the success in India (where caste and prejudice were so strong) of the experiment of a medical education, which was to be based on a sound anatomical foundation. Could such sceptics witness now the eagerness with which work is carried on in the three dissecting rooms by the students of all classes, English, Bengali, and Military, they would admit that the experiment had been eminently successful.

Your medical education, in the comprehensiveness of its details, is now equal to that of any student in Europe. The learning of the east has been reflected back with intensified lustre from the west. It has thus returned to the cradle of its birth; and is now, through the instrumentality of the alumni of this institution, being carried into the remotest corners of the empire. Calcutta, with its Medical College, and its other seminaries of learning, is the Athens of India. May you, my young friends, acquire and maintain the reputation for knowledge, equity, and honorable dealing which the *best* of the Athenians possessed; and may no Justinian ever [illegible] the Royal [illegible] medical instruction in Athens, the philosophical and scientific (and I would add the [illegible] profession of [illegible].

As this is the only occasion on which, without interruption to the course, I can address you a few words [illegible], before giving back the chair, which I have the honor temporarily to hold, to my esteemed friend Dr. Chevers, I will now ask you to [illegible] with me to-day to you. In

* It [illegible] were [illegible] have [illegible] the [illegible] tion.

† In these days, there [illegible] between the surgeon and the physician.

the original race.

And here, let me solemnly urge you, as in the sight of God, to use your position rightly. Your countrymen will travel long distances to consult you, if, as you ought to be, you are accessible to the poor. Practise your profession, not for your own benefit, but for that of others. You have eminent examples, in this college, of men who, in their day, in the districts in which they labored, have been blessings, as they are indeed now (though in another way), to thousands of their countrymen. I

These Native gentlemen, now teachers of medicine and surgery

and the Punjab, Ram Narain Dass's more especially in

opportunity to practise in Calcutta.

There are examples of another description, and against fel-

members of our profession who practise it as if it were a trade, in which their skill was to be estimated by the pound and paid for accordingly. These persons would appear to keep a

tioners are a disgrace to the noble profession of medicine. To

young native medical man was placed in sole charge of one of the stations in the Punjab, upon a comfortable salary. One

mentioned, on the supposition that the merchant was rich. The merchant, however, rich or not rich, was not then in a

An effort was then made to raise the money on the spot. But

not quite sure; but I believe that he died, and that the death was attributable to the delay in giving him relief. The young

to a much inferior one in Bengal. But he did not live to reach

course amongst some shipping in the Hooghly—a course which

against the chain cable of one of the ships, and overturned. The young surgeon, with one or two others, was drowned.

just pecuniary reward of our professional services, but better

disgrace our calling and ourselves.

marked and invidious distinctions that exist between their post-

ment." But, they must themselves raise it "to the standard it ought to reach." If they would fill the place in professional and public esteem to which, by their education and academic train-

gain ground and secure it in the public mind; and if they would hope to exercise an influence for good over their fellow citizens, and thus realize a position of abiding importance in the community among which they live;—they must do more than petition the ruling powers for public rights and privileges—they must take counsel with themselves, and determine to be true to each other and to their profession, they must by their individual, as well as by their collective efforts and bearing, endeavour to carry out those principles on which the practice, not only of medicine, but of all liberal pursuits is regulated, and without which physicians, like other professional men, can neither preserve their own respect nor the dignity of their calling.* "Be generous, credit to the full the goodness of your fellows, and hesitate to sully their fair fame."

Gentlemen, I have always had, and shall continue to have, after my connection with it has ceased, the interest of this College at heart. I have always watched, as I shall continue to watch, the progress of the students, who have been educated here, with the greatest interest. In common with all your teachers I expect great things from you. You go forth from this College educated up to the highest professional standard of the day. Do not cease to labor after you leave College. Vindicate your nation from the stigma which has been cast upon it,—that the intellectual cultivation of a Bengalee does not extend beyond his youth. There are higher rewards than University diplomas and degrees. In various ways you will have opportunities of advancing one or other of the branches of your profession. Something has been already done in this respect by sub-assistant surgeons. You must do more. Labor as Baboo Kunay Loll Dey is laboring: and, whilst you will thus be benefiting science and your country, your researches may lead you to some discovery, which shall entitle you to take a foremost rank amongst the benefactors of mankind. And, whilst you do this, you must not ignore what others have done before you. I say so because it is not uncommon for some people to attach no value whatever to books. One of such may say "Oh!

warning of the great Roman orator: "Nescire quid ante-

world did not profit by the writings of past generations, it would remain in a state of child-like ignorance.

In conformity with the curriculum fixed by the University of Calcutta, you have, during the past three years, been laying the solid foundation, upon which you are now to build the crowning superstructure of your profession. You have seen how, from his first formation, as a simple invisible cell, to the attainment of his final dimensions as God's last and most elaborate work upon the earth, man displays a systematic scheme of ceaseless development, waste, and repair,—a machine in

deness of the most amazing skill, beneficence, and design. Well was it said by the great but unfortunate painter Haydon:

[illegible] so overpowering is their simplicity, that it makes an ordinary nerve to stand unshaken in their presence." You have, in your medical studies, been singing a perpetual hymn to the Deity. But the beautiful machine, which you have hitherto [illegible] in its epochs of peace and purity, you must now contemplate under a far different aspect, an aspect which represents it defaced, injured, nay sometimes utterly destroyed, through the instrumentality of man himself. Man's intemperance, his follies, and his vices, too often cast a stain, which is [illegible] upon the constitutions, upon the corporeal inheritance entrusted to his care. But it is not always so. The accidents of life, over which he has no control, may consign him to a [illegible]. By the mysterious decrees of Providence, a famine may spread over the land, and man be stricken down by disease, the result solely of want. In whatever way it [illegible] human suffering must ever appeal to the best and purest feelings of our nature. Nor should it appeal in vain. To alleviate such suffering is surely the noblest achievement to which man can aspire. The power, to exercise this god-like function, it will be now your privilege to secure. Can there be any knowledge more precious, any acquisition which brings us—if we use it rightly—nearer to the Divine Benefactor of the Universe? And here I would urge you to recollect that the sick who come to us for relief are human beings, something more than mere *cases*. However convenient it may be to talk of their ailments as such amongst ourselves, in *their* presence we cannot be too careful. In our hospital, filled as it is with sufferers from every conceivable form of injury or disorder to [illegible] as liable, where the Grim Death is daily occupied in gathering in his victims, and where we have no means of shutting out from general view the harrowing sights incidental to all hospitals, there will be much to shock the feelings of those who, their senses rendered more acute by sickness, must remain exposed to it. Let us not *add* to their aversion, to remain, thus inevitably engendered. Let us be careful how we speak of our patient's disease in his presence; how, in [illegible] to be performed presently in the dead-house. Many a patient, [illegible] has been seen going from hospitals by thoughtlessness in this respect; and, whilst he has thus been deprived of the best professional skill, science has suffered, and the institution has lost a valuable opportunity for instruction. The advice which I give you now, applicable as it is in the performance of hospital duties, you will find of equal application in private practice. Patients are not *learned* in disease; and, by entering too minutely into the particulars of their ailments to themselves, you may create much unnecessary alarm. But I will not enter further into this last point. It requires great judgment to know how much you may disclose to the patient himself, though it is right that his friends should know the worst, if a fatal result be expected; yet not all the friends, for all have not equal intelligence, or equal control of feeling. It is better to select one in a family, and acquaint him or her with the true state of the case. Experience will be a valuable guide in deciding you how to act,—the experience which constitutes the consummate physician. And here let me impress upon you the importance of cultivating a calm, quiet, courteous demeanour. The charm of it can only be appreciated by those who have been practised in a land of sickness. Be kind to all. The outcasts of society will come to *you*, when all the world besides has closed its doors against them. Let these enlist your kindliest sympathies. God only knows the strength of the temptation under which they fell. Heal gently what them in the abyss into which they have fallen. *Your* kindness, coming like a ray of light from Heaven into the darkness to which the cold world has consigned them, may, with God's blessing, win them back to better modes of life. The moribund pauper, [illegible] wretched skeleton figure which, wasted by famine and disease, lies friendless in yonder cot, he requires our especial care. Tempted to the metropolis in search of employment denied to him in his own famine-stricken district, and which he has equally failed to secure here, he has at last succumbed to want and disease, and has been found perishing in one of the highways of the town. The Police have brought him to the great [illegible] of refuge, the Medical Charge Hospital of [illegible]. Poor destitute creature though he be, and beyond, doubtless, the reach of human remedy, we must not be too ready to cast him into other hands, because our own are so full.

"Rattle his bones over the stones,
He's only a pauper, whom nobody owns,"

is not the treatment which we should thoughtlessly bestow upon him. Send him away indeed we must to the hospital, which has been especially set aside for such cases as his, but let us do it kindly, and only after having fortified him, with a little food, [illegible] and stimulants, for the fatigues of the journey. We must not think of our noble calling in a narrow spirit. Practising it faithfully and zealously, we must extend its blessings as heartily to the poor as to the rich, remembering that charity is the noblest of all virtues, and the cultivation of which will bring peace to ourselves at the last.

(*To be continued.*)

THE TREATMENT OF CHOLERA.

By Charles T. Francis, M.D.

Considerable advance has been made in the treatment of cholera during the past twenty years, not only in withholding opium, and in not withholding water. I wish now to speak of the collapsed stage especially. Opium is admissible and beneficial in the earlier stages, but these are comparatively unimportant: in collapse it is poison. Still there is a great want of uniformity of action in the treatment of cholera, doubtless owing to the absence of uniform efficacy in any of the thousand and one vaunted plans which have been given to the world. I do not pretend to say that my plan is infallible; at the same time, my sphere of observation has been a very wide one, and the class of cases which have come under treatment have been most unpromising, nearly all being in a state of extreme collapse; and the mortality has been so uniformly low under this treatment, considering the condition of the patients, that it seems, *primâ facie*, to be worthy of a trial. But, with the treatment must be associated an amount of care, nursing, and watching, that will test the patience of the most assiduous. Yet it is essential, for without it no treatment will avail. I would premise by saying that I do not offer to the profession what has not been tried by others; on the contrary, sceptical members of the profession in India have had recourse to it, and can testify to the efficacy of the system. Nor do I pretend to much originality in it. I am indebted for the calomel part of the treatment to my friend, Dr. D. B. Smith, late Officiating Professor of Midwifery at the Medical College in Calcutta, who had himself become a convert to it after witnessing its success in the hands of Surgeon Lithgow, of the 75th Highlanders; and to Mr. F. Welsh, late Civil Surgeon in Assam, for his views on the subject of emulsions, the successful administration of which first drew my attention to the value of a diuretic in the treatment of cholera. The principles of treatment which I venture to recommend in this disease are as follows:—

1. Keep up the flagging action of the heart by diffusible stimulants. This I believe to be best effected by twenty minims of sp. æther. nitrosi, combined with the same quantity of sp. ammon. arom. and a little water. This draught should be frequently repeated every half-hour, or even every quarter of an hour, until the pulse is felt at the wrist. Then it may be

tarry fluid, which, on account of its viscosity, cannot circulate

constitute the serious secondary lesions from which patients die quite as frequently as they do from the original disease. It is marvellous to think of our forefathers withholding water in

will facilitate her efforts more than restoring the vital fluid to its natural consistence, to begin with. So much is undoubtedly due to good pure water in this respect, that we cease to wonder

and no doubt they are right, that they give nothing else.

the attack and the extent of the discharge stand in an inverse ratio to each other; in other words, that the more evacuations a patient has, the more poison will be eliminated, and so much the less severe will the attack become, is a disputed question; but all, who have had large experience in cholera, can entertain but one opinion, *viz.*, that such an idea is not borne out by facts. treated some 2,000 cases,) although I have certainly met with some which appear to bear out the above view. I will venture to assert that the greater the purging the worse for the patient. The best astringents, I think, are diluted sulphuric acid and sugar of lead. I would give one or the other. If sulphuric acid be prescribed, thirty minims every half-hour, with some warm tincture, should be the dose.* It is a common practice to give an astringent after each purging. I prefer giving it before, it in doses of from two to five grams in vinegar and water. The "sugar of lead and opium" pill, which acquired so much celebrity when first introduced to the profession by Dr. Graves, is not admissible in the collapse of cholera, *i. e.*, the lead may two grams of asafœtida, one of cayenne, and one grain of black pepper. And, as a prophylactic measure, such a pill is regarded for them quite a panacea. It is admirable, in this sense, for than in other parts of the treatment.

water. I look upon calomel and cantharides as the staple upon which most

and nothing so surely equalizes the circulation and promotes the secretions (which are suspended in cholera) as this mineral. a rule, is safe. Over and over again have I sat by the bedside of one supposed to be dying from cholera,—no pulse at the wrist, features cadaveric, that frightful restlessness so characteristic of the disease, all noting the apparent rapid approach of death—and, seeing the bilious stool appear, have felt that the danger was past. Others will say that they have done the same, but with different results. I do not say that all my patients have recovered, but more than half have, which, bearing in mind that the unfortunate victims are such as are usually given up and abandoned to their fate, tells forcibly in favor of the treatment. I am quite inclined to believe, however, that calomel alone will not produce the same satisfactory issue that calomel *plus* cantharides will do. I prefer giving calomel in large doses, at longer intervals, in preference to the plan advocated by Dr. Ayre, of Hull, *viz.*, grain doses at much shorter intervals. I give as much as 30 grains or 40 grains, to begin with, and repeat it every two, three, or more hours up to 150, 200, or 250 grains. In only one case, out of hundreds, have I seen salivation follow; and it yielded readily to treatment. Dysentery is to be watched for with all this calomel in the intestinal canal, and therefore it will be well to give castor oil in small quantities for two or three days after the attack is over. I do not advocate castor oil on *Dr. Johnson's* principle. One great benefit which, humanly speaking, is almost sure to follow its exhibition, is that there will be no uræmia. With the returning secretion of bile comes that of urine, slight at first, but soon very plenti- retained in most cases.

A curious fact is mentioned by Dr. Parkes in his work on cholera, and by Dr. Joseph Ewart in his "Vital Statistics of the Army in India," which shows that the mortality from cholera, in the earlier days of our acquaintance with the disease, was much less than in succeeding years. Neither of these that in those days calomel was much more used than it is now, we shall have, I think, some clue to the mystery. Epidemics of cholera were, occasionally, surely quite as severe then as now, and yet the mortality was as low as from 25 to 35 per cent.

drawn to this class of remedies. The prevailing idea is that, there being no absorption, to give medicine with a view to increasing or promoting the secretion from any organ is next to useless, as it will only act as a foreign body, and be a source of mischief rather than of benefit. And if this be said of violent measures as prescribing cantharides! Will not the kidney be excessively irritated? is asked. Already congested, to act upon it thus will surely produce violent inflammation, or some very serious mischief. What will be said when I state that I have given the tincture of cantharides in five-drop doses, till between two and three drachms have been taken in from thirty-six to forty-eight hours, without a bad symptom? An early secretion of urine has followed its use, without any affection of the kidney whatever. And in fatal cases I have never met with any condition, in this organ, different to what is ordinarily seen in it in death from cholera. I observe that,

* [illegible]

† Dr. [illegible]

within the last year or two, diuretics have been advocated by more than one author, and I conceive that this is a step in the right direction. Few would venture upon so powerful a diuretic as this; but let me assure those who pause that they may do it with perfect safety. Mr. Webber, Civil Surgeon in Assam, has used it for a longer period than I have, and his experience of its efficacy and harmlessness is even greater than mine. It is well to combine a warm tincture with the tincture of cantharides, and a little tinct. lavand. co. and sp. ammon. arom. and ether: and, looking upon cholera as a disease of malarious origin, I have always added a few drops of liq. potass. arsenitis to each dose, following it up, in convalescence, with quinine, with a view to avoiding all chance of a relapse; for relapses are occasionally not uncommon.

Frictions.—With regard to frictions, if agreeable to the patient, (and they often *are* in spasm), I would encourage them. As I said before, good nursing is a *sine qua non*. So much may be expected from this, that a professional friend, well known in medical literature, once said to me that, if he were ill with cholera, he should like to be put under the care of some maniac (some one with peculiar views of his own), because such a one would be sure to surround him with all the comforts of a sick chamber, and himself see that his instructions were fully carried out!

Remarks.—It too frequently happens that patients, at these times, are merely made the receptacles for drugs In the crisis of an epidemic, "incoherent therapeutical experiments" are made with no result. We learn in sanitary science, but in the treatment—the medical treatment—of cholera we learn nothing. Some there are who deliberately *do* nothing when a patient is in extreme collapse. They say—"Oh, why worry him? let him die in peace!" Dr. Balfour, when advocating the use of strychnine in cholera, says:—"God help those who fall into the state of collapse!" Now it is just in this very condition that I have found the treatment above defined so successful.

It may be presumed that, in the course of a long residence in India, I have had opportunities of testing the efficacy of various so-called cures for cholera It is so; and I may safely say that, *in collapse* in cholera, I have found nothing equal to this plan of stimulants, water, calomel, and cantharides, and unwearied watching. Cholera, *before collapse has set in*, may be combated in various ways, according to the nature of the epidemic, of the case, or of the constitution of the individual.

I would add, in conclusion, that great care must be taken, in these collapsed cases, to ascertain the condition of internal organs. Patients, when apparently recovering, will be dying, it may be, of pneumonia, without any external manifestation of the latent mischief. Natives are very fond of lying prostrate on their backs. This should be prevented; and attendants must be told to move them from side to side occasionally. Dysentery is a very common secondary disease, requiring early detection.

Recovery from collapse will depend very much upon the normal condition of the heart. If this organ be in any way diseased, it may be unequal to the occasion. Collapse in scrofulous patients, or in those suffering from any constitutional affection, is rarely, or with great difficulty, recovered from. But where there is nothing of this kind, and where all the organs are healthy, the chances are favorable. As this communication (which appeared, in part, in the *Medical Times and Gazette* of the 8th February last) is passing through the press, a professional friend,* in practice in Calcutta, is testing the efficacy of the treatment advocated, and informs me that he is abundantly satisfied with it. Will others follow his example, and favor the profession with the result in these columns?

* Ten very bad cases were admitted into his hospital, and *nine* have recovered under the calomel plan.—*Ed., I. M. G.*

FIELD SURGERY WITH OUR FRONTIER FORCE.

BY BAMLET W. SWITZER, F.R.C.S.I.,

Assistant Surgeon, 6th Punjab Infantry; Civil Surgeon, Kohat.

THE Punjab Frontier Force is one that is necessarily kept always in a state of perfect efficiency, to meet the enemy at any moment. Cheek by jowl with their foes on our border, who are always turbulent and restless, the motto of my own regiment—*Ready, Aye Ready*—might well apply to the force in general. All our regimental and hospital establishments are kept up on a war footing, and a single regiment, a station garrison, or for that matter the whole force, could march at an hour's notice on the war trail.

This state of regular efficiency is highly conducive to perfect results, when the machinery so constantly looked after is required to move. The gear is always found to work smoothly; no screws are loose; no rust clogs the wheels. Information that a hill tribe is assembling for a raid, which may reach us day or night, does not necessitate the frantic rushing to and fro of Brigade Majors, excited Commissariat Officers, daft Adjutants, or Mounted Orderlies, but the troops, cavalry, artillery, or infantry, as may be required, fall in quietly, and are on their road to the threatened pass in half an hour; and if at night, in such silence that no one left behind knows anything of the move till morning, or the firing amongst the hills tells the news.

To such a force no doubt action is welcome, and fighting a pastime. Recruited in great part from the tribes, they go to fight the men glorying in their bravery and prowess; for it has often been the case in hill campaigns, notably in the Umbeyla one, as also in the fight I now relate, that their friends and relations amongst the enemy called out and taunted, by name, the individuals they recognised in our ranks.

Close to Kohat, amongst the border hills, the Beezootees lead their nomadic life, a tribe the wildest of the wild, without villages or cultivation in their country, who live in caves, under overhanging rocks, or anywhere, in fact, where shelter is, whose means of subsistence depend on the barter of grass and firewood in our plains for food and gunpowder. Unkempt savages, their daily life a struggle, their only joy a raid, very brave on their hills, but who only venture on our plains to sweep off cattle or women, the two items of local wealth to such a people; for the sex, with them, is only on a par with the beast of burden or a household chattel. Imbued with feelings of the most implacable but mercenary revenge, they, under a rude kind of bastard honor, exact the old Mosaic law of justice—"Eye for eye, tooth for tooth, hand for hand, foot for foot" (Ex. xxi. 24), or its value in silver; laying down codes by which the amount of blood-money is determined. Family and tribe feuds exist amongst them for generations; and, when not arranged satisfactorily in a pecuniary way, it is imperative that, supposing you and I were Beezootees, your grandfather having killed mine ages ago, I should kill you when I got the chance. With different tribes the money value varies, but a life is worth about Rs. 360, and the loss of a limb half that. And so these people live, brave to rashness often, but devoid of any trace of civilization, believers only in their *kismut*; and when a man is hit to death, if he can but struggle straddlegs on a ram, and thus let his soul depart, it wings its way to the Beezootee happy hunting grounds. Of course they disbelieve in our surgery, or at least prefer their *kismut* to seeking our aid. When they do, however, patronise a dispensary, they look for some sudden necromantic power to be displayed in the cure of a hideous deformity or neglected accident, and are ill-inclined to yield to the knife, or lie quiet under the healthfully slow process of granulation.

Kohat, which is but four miles from the Beezootee tribe [illegible]

exchanged shots with our subjects in the plains, though without found its way to the Kohat Dispensary, the ball having struck the lower third of the right thigh, passing through in front of the femur, and taking a slice from the left thigh. As the tribe would Matters in the Beezootee Foreign Office did not progress satisfactorily, for, unlike us, they believe rather in fighting

Infantry, having orders to advance to the top of the hill, found the contour of the hills. Here Ruxton, their gallant leader, mis- destruction to force the top of the further hill. I should have said Major Jones, 3rd Punjab Cavalry, commanded the force in the field, and had given orders that the conical hill only should be taken. The advance of the 3rd, however, and their coming required the recall of the 6th Punjab Infantry to support them on the left, and shortly after the red facings might have been seen mounting through a precipitous gully, and clambering like guns were warming the sungur with both shot and shrapnel from a three-pounder and twelve-pound howitzer, and some of the latter burst very prettily right over it. Although the range for these toy guns was excessive, being 800 yards, they had to desist, however, as our men closed towards the summit. Up the brave lads swarmed until they were within forty yards of their enemy's muzzles. And the matchlock balls and stones, hurled down upon them, soon made the work hot. Our troops found they were stopped by perpendicular rocks, up which not even a chamois could climb, and that only a single file path led to the sungur on the immediate apex. Here many were shot down, for as a man attempted to mount the path, the enemy under cover turned their weapons on the spot he must pass, and when he appeared they fired. The men dropped fast, and on such ground could make no rush to grapple their foes. A man cannot charge up a rock, eighteen feet perpendicularly over his head, without a crevice even for his nails to cling to; and so, crouching for protection under these cliffs, it was soon seen the enemy's position was impregnable. Firing down on our men, and heaving stones, or rather small rocks, not at the men, but high into the air, that their impetus as they fell might be crushing, these savages, with a country-made 'Cronstadt' at their back, made their havoc of course. With whom it originated, or on whom the blame falls, I know not; but the advance on the sungur was a sad mistake, and led to the grievous loss I proceed to tell of. However, it was most bravely done, and I know not how soldiers care to lay down their lives more gloriously than with their face to the foe. Two or three attempts were made to storm the summit, but there was no path by which the men could reach it, save the narrow one I spoke of, with dozens of matchlocks turned on it. Here Captain Ruxton, leading his men, was shot, and Muckinnon, his Adjutant, also wounded.

The 3rd now fell back, and the enemy, seeing the men retire, came out of their sungur, and cut up poor Ruxton and one of his subadars, who fell beside him To do this, however, they had to travel the small fatal path we had been trying to ascend, and of course to expose themselves. The volleys from our rifles now took up the game they had hitherto been playing so safely behind their rocks, and in a few minutes so many of them were knocked over, that they beat a hasty retreat back to their shelter. After this our troops retired in order, covered by skirmishers; the Beezootees did not dare to follow, and as night was coming on, the two regiments, bringing their killed and wounded, came back to the plain. Captain Ruxton's body, and that of his subadar, to our great regret, could not be brought. Both were known to have been killed, and to recover them at that time would have involved a frightful loss.

Such is an account of this day's fighting, as unfortunate as it was unexpected, for no one thought, when leaving cantonments in the morning, that night would see us returning with so sad

When the 3rd Punjab Infantry advanced on the sungur, and the 6th Punjab Infantry mounted the gully to support them, it was pretty evident that I should have some work before long, and that it behoved me to open the capital case. The doolie, carrying instruments, bandages, and hospital appliances, with a native doctor and hospital staff, were brought up in readiness, and the dandies* sent up the hill for the wounded, who soon came down. As far as I can remember, those who were seriously hurt presented themselves in the following order :—

1. Sepoy struck by bullet on a button of his uniform opposite xiphoid cartilage ; it was a lucky button for him, as it turned the ball, which, passing into the abdominal parietes, a little to the right of the median line, coursed round in front of the liver, and lodged in the right side under the skin. The peritoneum was untouched, and as the ball could be readily distinguished, I cut down on it, and took it out on the spot. From the entrance to the artificial exit, it travelled six inches round the abdominal wall.

2. Jemadar shot through the left thigh, the ball passing in and out in front of the femur ; no hæmorrhage : a wet bandage sufficed for him.

3. Sepoy. Bullet through left arm two inches above elbow-joint ; no hæmorrhage ; bone not touched : wet bandage.

4. Sepoy. Severe bullet graze on left arm, two inches below shoulder on outside. The bullet had gouged a piece out. Wet bandage.

5. Sepoy. Bullet entered right cheek in centre of masseter muscle ; no hæmorrhage ; bullet lodged, and not to be felt near wound by long probe ; mouth not entered : compress of wet lint. I may anticipate, so far as to tell, that this bullet, which struck the *right* cheek, was felt next morning below the angle of the left scapula, where I cut it out. How it got there, it best knows itself.

6. Sepoy. Bullet through right arm to left of humerus, three inches above elbow, passing out behind ; no hæmorrhage ; bone not touched : wet bandage. This and No. 3 were very similar, but in different arms.

7. Major Hoste. Contused and lacerated wound on right temple from a stone which stunned and knocked him over, cutting a branch of temporal artery, and covering him with blood : edges of wound brought together, and wet lint.

8. Sepoy. Bullet entering the front of left shoulder, smashing head and neck of humerus, splintering shaft, opening joint, and passing out below angle of left scapula. Very smart hæmorrhage, most likely from posterior circumflex, as that vessel appeared to lie in the track of the bullet ; the little finger, as a probe (the best), found everything in smash. A few pieces of bone taken away with bullet forceps, and wound plugged deeply before and behind with long strip of wet lint. Arm put in sling, and, being a Sikh, a good stoup of brandy and water, for he had lost much blood ; plugging the wounds completely controlled the hæmorrhage.

9. Naick. Bullet entrance at right angle of lower jaw, passing deeply through thick muscles of back of neck, and out a little to left of mesian line, one inch below scalp ; bleeding pretty sharp, but easily controlled by plugging : bone not broken.

10. Sepoy (Zerein). Very badly chopped up ; he was first hit in the right calf, bullet passing through and breaking fibula about two inches from its head. This poor lad was one of the foremost at the sungur, and, when wounded, his rifle and bayonet dropped from him down the hill. At this time the enemy were coming on, and he could not get away ; as he lay on the ground, they came at him, and slashed him with their knives. His incised wounds were, *first*, one four inches in length across the vertex, deeply notching both parietals, but not penetrating ; *second*, a slash cutting off all the cartilaginous portion of nose and the upper lip, laying the right angle of mouth open deeply ; the nose and upper lip hung below his chin by a strip of the skin, the size of a goose quill ; *third*, a cut passing deeply through the nasal bones into the nose behind the last ; *fourth*, a shallow cut across the front of chin ; *fifth*, a deep cut into the upper third of left arm on the outside, going to the bone, three inches in length ; *sixth*, three separate slashes over the dorsum and fingers of left hand,— one opening the metacarpo-phalangeal articulation of third finger. His face was a horrid spectacle, with his nose and lip hanging down, and the cut had also sliced away the anterior half of the two front incisor teeth. I could at that time only replace the severed parts, and keep them as much as possible *in situ* with pledgets of wet lint and a roller, dressing his other wounds similarly, for evening was upon us, and we were moving towards cantonments. The other wounded of my regiment were not of sufficient interest to detail, being chiefly contusions from the stones hurled at them. In all, the right wing, 6th Punjab Infantry, which went into action 259 strong, lost two killed and twenty-one wounded.

The 3rd Punjab Infantry, who were double the strength and longer under fire, lost nine killed, two mortally wounded, nineteen wounded. The total list of casualties was therefore fifty-three.

Night had closed in before the wounded were housed in hospital, and then the field dressings were removed so far as necessary to give place to careful examination of the nature and extent of the lesions, that all might be rendered safe for the night. Zerein's nose and lip were sewn together with nine interrupted sutures, and I had some hopes of saving them ; the others were made comfortable, and what needful fresh dressings were required, applied.

As this ended the field surgery of the day, I may also end my paper, reserving to a future opportunity an account of the progress of the wounded, and a few observations on the points of surgical interest in relation to gunshot wounds which occurred.

KOHAT, *April*, 1868.

* A dandy is a hammock slung from a pole, carried by two men, and used for the hills, where a doolie is useless.

A CASE OF SNAKE-BITE.

BY W. J. MOORE, L.R.C.P.,

Surgeon, Rajpootana Political Agency.

As with most ailments not readily curable, empirical treatment and pseudo-specifics have been applied, to a very great extent, in the condition resulting from the bites of poisonous snakes. To enumerate all the substances which have from time to time been imposed on the credulity of mankind as remedies, would indeed be an endless task. The ancient physicians extolled preparations of the serpent itself. Both Seneca and Pliny inform us that human saliva was believed to be a powerful remedy. A great variety of vegetables have been celebrated, the principal one being the *nepanthes ranicata*, or *ophirrhiza mungos*, called by Sir William Jones *chandraca*. In Australia the root of the common male fern, *polypodium filix mas*, has long been used as a secret cure.* Waring† gives a list of fifty-five plants, of reputed efficacy in snake-bites. The famous Tanjore pill contains several vegetable materials, among others croton oil. The people of Scinde use a mixture of various vegetable substances, into the composition of which chopped onions enter largely. Among minerals, the oxides of metals have been especially reputed, under the idea that the poison of serpents acts upon the blood by attracting oxygen.

* Underwood on "Snake-bite." Braithwaite's Retrospect, page 37), July, 1859.

† Waring on "Medical Plants of India." *Madras Medical Journal*, January 7th, 1862.

Italian naturalist, conceived he had found a specific in nitrate of

London, 1852, much discussion on the subject ensued, the result being a general concord, that scarifications, suction of the wound,

bat torpor, ought to form the bases of treatment. More recently the ligature, incisions, sucking the wound, cupping-glass, wash-

of silver, with butter of antimony, or with red-hot iron, and the internal administration of *eau de luce* and brandy, were the remedial agencies recommended by Gunther.§ It has also been

culatory system by enforced exercise. It is stated that Dr. Spilsbury, formerly Physician General, Calcutta, tied a man bitten by a snake behind his buggy, making the man run several

less saved by maintaining, by continuous and forced exercise, the action of the heart and lungs, and thus preventing the paralysing influence of the poison on these organs, at the same time causing the skin to act so profusely as to make

desirable. Dr. Hood observes:—"So long as we maintain the action of the heart and lungs, the patient cannot die."

It will at once be admitted that none of the methods of treatment enumerated present anything really specific. And yet, undoubtedly, persons have recovered after all, as indeed after the use of various nostrums, thus affording the latter an undeserved reputation. And the explanation is that, from one or more of the causes afterwards referred to, such patients did not receive into their system a fatal amount of the poison. But doubtless the

only rational principles of treatment, *viz.*, destruction or removal of the poison, support by stimulation, and prevention of torpor.

I believe the chances of recovery from snake-bite, notwithstanding the rapid absorption of the poison, will be materially increased by the immediate application of some liquid escharotic agent to the wound. And the following case is a striking instance of the correctness of the above remark.

cut-throat, and, on returning, had put the candle out and lain down, when the puggee or chokedar in the outer verandah called out that he was bitten by a snake. The candle and matches

minute, only delaying to strike a match and light the candle. When passing the dressing table, my eye caught a bottle of fuming nitric acid used the previous day for some chemical process, and snatching this up, a drop was applied, and by manipulation caused to pass into the wound within at least

of a venomous snake,* from one of which a little blood oozed. It appeared that the man, lying in the outer verandah, stretched his leg, and placed it upon the snake; on feeling which, he immediately struck at the reptile with his stick. The serpent, back, and must have been thus injured at the very moment of inflicting the bite. On being bitten, the man had assumed the erect posture, but immediately sat down again. After applying the acid and a ligature above, the general condition was examined. Although so short a period had elapsed, the pulse was feeble and intermittent, the countenance anxious, and the whole brandy was immediately administered, and in the course of five minutes liquor ammonia. During two hours, faintness, sickness, sighing respiration, feeble, quick intermittent pulse, caused anxiety regarding the result, after which a satisfactory reaction occurred, but some days elapsed before the man thoroughly recovered. The acid caused a slight sore, which rapidly healed; but there was no swelling, tenderness, or discoloration, either about the part or in the neighbouring glands.

From the days of Virgil† it has been matter of observation that the same serpent possesses very different degrees of venomous power at various seasons of the year. It is also stated that snakes are more savage and dangerous in the hot part of the day.‡ The temperament, state of health, and bulk of the person bitten, and the question if the snake had shortly before bitten something else, are, moreover, all matters affecting the result. But as the man whose case is detailed was injured by a cobra, without the intervention of clothing, as he was of average strength, and in fair health, I think that it may be reasonably concluded that the

cation of the nitric acid, consequent on the accident of this powerful agent being at hand. Professor Halford, of Melbourne, states, as the result of recent investigations, that when a person is bitten by the cobra, molecules of living germinal matter are thrown into the wound, speedily grow into cells, and as rapidly multiply; so that, in the course of a few hours, millions upon millions are produced at the expense, as Dr. Halford believes, of the oxygen of the blood. Hence the gradual decrease and ultimate extinction of combustion, and chemical change in various parts of the system, with the consequent cold, sleepiness, and insensibility. However this may be, the immediate introduction into the wound of some escharotic, more searching and powerful than nitrate of silver, causing destruction of the poison before it can all be absorbed, is doubtless the only "specific" treatment,—a fact which, to prevent recourse to worse than useless nostrums, cannot be too widely known. It would also appear essential, that the agent applied should be a fluid which will easily gravitate to the bottom of the wound. Although Fontana has shown that a mixture of nitrate of silver and venom destroys the power of the latter, it does not follow that a similar effect would be produced by the application of caustic to a bitten part. However firmly applied, nitrate of silver only acts on the surface, and as its corroding action, equally with other escharotics, stays the flow of blood, it appears as likely to do harm by the latter action as the reverse by its chemical power. And these remarks are equally applicable to all other solid escharotics, not excepting the actual cautery.§

HINT FROM A HAKEEM.

By A Civil Surgeon.

It is [illegible] the custom for the European physician to [illegible] Although our medical [illegible] of Eastern practice, it is well to recollect, in the spirit of Newton, that the European is but "as a child playing on the seashore, while the immense ocean" of [illegible] him.

As I was [illegible] that the Yunani hakeem was [illegible] "fishers" picking up pebbles, "as a [illegible]" In [illegible] it may mean, here is an old [illegible] which [illegible] into my [illegible]. Every Civil Surgeon knows how [illegible] pimply-faced [illegible] and lengthy red their visits, when the [illegible] quinine [illegible] protracted treatment. I was living in a [illegible] a few years ago, where chronic spleen disease is very common. And a patient, who was disappointed at my unsuccessful treatment, suddenly disappeared. But, after a while, he re-appeared in my vicinity, and surprised me by his altered and improved condition. His spleen was reduced to the volume of a cricket ball, from having reached the umbilicus. On enquiry, I found that the sufferer had turned his back upon European science, and that he had appealed *successfully* to the Yunani [illegible]. He had taken one drop of *sunkia ka tezab* [illegible] *ka tezab*, or the bubble, every morning for a month, which he said had "eat away the congealed blood" in the organ. The man was virtually cured. And I have kept [illegible] in my pocket ever since, with satisfaction to myself and [illegible] to many an unhappy sufferer from spleen [illegible]. It is necessary to be careful [illegible] to cover the hole made in the *buttasha* with thick gum or flour paste. And I suppose to say, that a more ingenious vehicle than this native [illegible] must be found, at hand, to convey a drop of pure sulphuric acid into the human stomach. The sugar-bubble slowly melts in the stomach, and a trifling sense of heat is felt in the organ, without any *after* harm that I ever heard of. Now, if it be the case, that the altered condition of the blood, in chronic spleen disease, is analogous to the state of the blood in scurvy, here is a very choice bit of ancient pathology unearthed [illegible] "a pebble, in fact, thrown into our [illegible]."

I may add that the biniodide of mercury ointment over the diseased organ is often combined with the acid treatment, but I have never found the *hidden virtue* of this ointment when trusted to alone. In some very obstinate cases, where the enlarged organ is reduced to the condition of an hypertrophied gland, I also add a pill, consisting of ferri iodidi gr. ij., potassii iodidi gr. ij., opii gr. i. But this is always given as an adjuvant to the acid, whose curative action is decided, but *slower* in the advanced stage of the disease.

SHEALKANTA OIL AS AN EXTERNAL APPLICATION FOR ITCH.

By Krishnadhun Ghose,

Sub-Assistant Surgeon in charge of Bhangalpore Charitable Dispensary.

This plant (*Argemone Mexicana*) is well known throughout the country; it belongs to the natural order Papaveraceæ. All the parts of the plant are full of thorns. The flowers are of a bright yellow color. The capsules are of an elongated shape, and filled with seeds resembling black mustard; but these seeds, instead of being smooth, are rough at the surface. About this time of the year the seeds are collected, and oil of a pale yellow color is extracted. This oil is used for burning purposes by some people on account of its cheapness.

I tried this oil as an external application for itch with marked success. In twelve cases the oil was tried, and in every case recovery was effected within a week. I had the parts washed with soap before applying the oil. The recovery of twelve cases is no guarantee of its curative property, but I bring this before the readers of the journal to give them an opportunity of trying the efficacy of this oil.

The plant has a yellow oily juice of a disagreeable fishy smell. When this juice is applied over a fresh, small, unbroken pustule of scabies, the latter becomes enlarged and quite *distended* with pus. This action is rather peculiar, and suggested to me the idea that the oil has a direct influence upon the *acarus*. I once succeeded in getting a living itch-mite, and putting it under the microscope. I placed a small quantity of the juice mixed with water upon it; the creature died immediately. I never had the opportunity of trying the *oil* in the same manner, but I doubt not it has the same effect.

I have procured some oil with great difficulty, as the last year's produce is exhausted, but a fortnight hence the oil will be found in abundance. As soon as I get the oil I will try it on a more extensive scale, and lay the result before the public. In the meantime I would request my professional brethren to give the remedy a trial.

CASES FROM PRACTICE.

CASE OF CARDIAC EMBOLISM.

By Surgeon J. R. Jackson, M.D.,

Superintendent of the Central Prison, Meerut.

Kurrmut Ali, about twenty years of age, a strong, well-developed man, had been for three months in the Meerut Jail. About a month after admission, he began to complain of feeling fatigued at work, and was listless. Three weeks ago he was sent to the [illegible] to grind wheat, he became suddenly faint, and changed color. He was sent to hospital, treated for fever, and in two days went to the convalescent gang. He was again admitted into hospital, suffering from fever, on the 2nd March. His case appeared a simple one, and did not attract particular attention. He was treated with cinchona alkaloid, and had a liberal dietary, with stimulants and rum.

On the 3rd March, at 3 p. m., he sat up in bed and took his dinner, after which he lay down, covering his head with a blanket. At 5 p. m. he was found dead, the warm body showing that he had died but a very short time before.

Post-Mortem 13 hours after death.

Body in good condition; by no means emaciated; muscular power well developed.

Lungs gorged with frothy mucus; lower posterior parts deeply congested (hypostatic congestion).

Other organs healthy, with the exception of the spleen, which was soft, pulpy, and in the usual state of malarious disintegration.

Heart. Right side contained a large embolus. This was of a tough consistence, and adhered closely to the fleshy bands and columnæ carneæ, and had to be torn from them in process of detachment. That portion of the embolus in contact with the substance of the heart was of a pale color, and closely resembled in texture and appearance half-cooked veal. At its free end it merged, but not very gradually, into a tough, black clot. The right auricle was completely filled with the [illegible], which formed a mould of it, were [illegible] extending into the different blood-vessels. The left side of the heart was almost empty; but there was in the ventricle, and closely adhering to the columnæ carneæ, an embolus clot of a similar appearance to that observed in the right side.

On removing the liver, a long clot, the longitudinal half of it having the entire fleshy appearance of the cardiac embolus, and

tion, must have preceded death but a very short time. We
symptoms; yet the appearance of the clot would lead one to
greatly impeded. The characteristic state of the spleen showed that the dyscrasia, which could so rapidly change the vital fluid,
present case. But, in it, the clot was free in the right auricle, and the symptoms ushering in death were very distressing.
ante-mortem symptoms.

From maceration in spirit, the clot has lost very much of its original appearance. The line of demarcation between the
and the fleshy pseudo-organised part of the embolus, is not now

A CASE OF HYDROPHOBIA SUCCESSFULLY TREATED BY SALIVATION.

By J. J [illegible], Assistant Surgeon,

On the morning of the 7th April, a sweeper (servant to one of the civil officers) was admitted into hospital, suffering from severe symptoms of hydrophobia the result of a scratch
ago, while forcing open its mouth to administer medicine. This
previous to this.

On the evening previous to his admission, the man began to experience uneasy sensations, which he described to me as "a burning feeling at the epigastrium, and restlessness." The next morning, symptoms of hydrophobia fully set in.

On admission, the paroxysms were very violent and frequent, the least noise or touch bringing on the spasmodic attack. I had him bound on to a cane-bottomed chair, surrounded him
chair a large vessel of hot water; and one drachm of mercury,
under the chair in a piece of earthen chattee over a charcoal fire. Fifteen grains of calomel were given at once, and five grains
was kept up till all symptoms subsided.

In about four hours the patient was quite composed, and free from all spasmodic symptoms, but was profusely salivated. On the evening of the 8th, he had rather a sharp attack of fever. A dose of castor oil was given, and saline mixture every three hours; with alum gargle. Diet.—Mutton soup, milk, and bread.
pains.
remains. Continue alum gargle, and tonic.

AMPUTATION OF PENIS, ACUPRESSURE EMPLOYED TO PREVENT HEMORRHAGE

By G. H[illegible]s, M.D.,

[illegible]

[illegible] in the [illegible] for April by Mr. [illegible]. I took it
[illegible]
[illegible] the [illegible] was [illegible] and to stop
My plan is this. I first [illegible] a large [illegible] to keep the [illegible]. I then [illegible] the [illegible] of the [illegible] I then [illegible] I [illegible] without being very tightly applied, completely close all the [illegible] being lost. The needles may be removed after forty-eight hours.

April 7th, 1868.

ON THE TREATMENT OF GONORRHŒA BY BLISTERING.

By B. N. Hyatt, M.R.C.S.E. & L.S.A.L.,

[illegible]

I have [illegible] blistering, with the best results, and am of opinion that it is far more speedy and effectual than the usual plan of treatment, in which patients are made to swallow bottles full of the most nauseating and unpleasant medicines.

In private practice, it is often difficult to persuade patients to submit to it, because it necessitates their lying up for two or three days; but, in hospital practice, it is infinitely preferable. I [illegible] of immediate cure, and in obstinate cases of long standing, which have resisted all ordinary treatment. In few instances do relapses occur, and they have not failed to yield to a second [illegible]

As an accessory to the treatment, all that is necessary is at first an aperient, followed by salines and occasional injections of argent nit. grs., ij, iij ad ℥j.

To take an ordinary case in point. On the patient applying to the hospital, and presenting the usual appearance and symptoms, with glans penis swollen and tender, redness of lips of urethra, and abundant thick yellowish discharge, with scalding pain on passing urine, he is ordered two aperient pills or grs. xx of *kaladana*, with grs. ij, jjj hyd. chlorid, and in four to six hours afterwards haust aperiens. Rest to be insured during the day, with low diet. In the evening a blister, two and a half to three inches square, is applied high up on the anterior and inner side of each thigh, to be kept on during the night, and the blistered surfaces to be dressed in the morning with simple dressing or [illegible] carb. i, soda carb. grs. x, antim pot. tart grs ¼, pulv. zingib. [illegible] M.S. [illegible] ℥ss Mist. Hyat. A little lukewarm water to be injected once or twice during the day.

On the morning after the application of the blisters, and for the ensuing twenty-four hours, the symptoms will be somewhat aggravated, with an increase of discharge, and more pain on micturition; but these symptoms rapidly subside, and on the third morning of admission, the patient will express himself altogether better. The discharge is observed to be much diminished, and there is less pain on micturition. The mixture [illegible] there will be very little discharge, which will have quite changed its character. The mixture is now discontinued, and an injection used, twice a day, of argent nit. or zinci sulph. On the fifth day, hardly any discharge perceptible, and that only by a day; and on the sixth day, the blistered surfaces having completely cicatrized, and no signs of running being visible, the patient is discharged cured, and fit for duty.

I consider the application of blisters to the thighs preferable to any other situation for the counter-irritation, though, in some instances, I have applied a blister to the under surface of the penis.

My object in writing the foregoing is because I am inclined [illegible] it should be, and I feel confident that, after giving it a fair trial, the usual plan of treatment by copaiba and cubebs will not be [illegible]

[illegible], 1868.

[illegible] E. I. M. G.

FOUR CASES OF CHIONYPHE CARTERII (MUCEDINOUS OR FUNGUS DISEASE OF INDIA.)

By Honorary Assistant Surgeon P. A. Minas, G.M.C.B.,
Civil Surgeon, Hissar.

CASE I.—CHIONYPHE CARTERII AFFECTING THE RIGHT FOOT; AMPUTATION BELOW THE KNEE: OSTEOMYELITIS; RECOVERY.

During the past half-year very few operations were performed in the Government Charitable Dispensary at Hissar, owing to the prevalence of fever in the town, and in the villages near the canal. It is not my object, in the present paper, to enter fully into the question of the causes and effects of this fever. Suffice it to say that the loss of life caused by it was very great: that the sufferers were in many cases also affected by a serous diarrhœa, (a sort of "dysenteria incrementa,") or by dysentery; and that the survivors showed the effects of malarious influence in the shape of enlarged spleens.

Kama, a Jan cultivator, aged twenty-eight, a resident of the Hissar district, was admitted into the Charitable Dispensary at Hissar, on the 17th October, 1867, suffering from the "fungus foot" disease, of ten years' duration. The affected foot (the right one) measured eleven inches in length, nine inches round the toes, fourteen round the instep, and sixteen round the heel and ankle.

The foot was covered with sinuous openings, giving exit to a black granular substance, imbedded in scanty mucilaginous discharge. These openings were to be seen on both the dorsal and plantar surfaces, but chiefly over the malleoli. The toes were shrivelled and contracted; the general health was good; there was no organic complication, except that he was greatly emaciated, and was in the habit of taking opium at night to allay the pain. As to the origin of the disease, no information could be obtained, except that an abscess had formed on the ball of the great toe, and had been lanced by a village barber; that the swelling began afterwards to increase; and that more abscesses had followed, and left these openings as relics.

Two days after admission the patient was attacked with fever, and remained under treatment for twenty-five days, when he had completely recovered; and at his earnest solicitation, on the morning of the 14th November, I amputated the right leg below the knee under chloroform. The arteries were well secured, but a great deal of venous blood was lost. Three weeks later, when all the ligatures had come away, and the stump was nearly healed, he was again attacked by fever, and symptoms of osteomyelitis supervened; he complained of sub-acute pain in the stump. The tibia protruded through the anterior flap; the discharge became profuse; he passed restless nights; slight bleeding took place from the inner side, where the stump opened out, but this was checked at once by the application of tannic acid. Tonics, stimulants, anodynes, cod-liver oil were given internally. Ere the thought of a secondary amputation was entertained, the character of the season changed, the cold weather set in, and the patient began to improve. The protruded bone began to be covered with healthy granulations, fever entirely subsided, and a marked improvement took place in his general health. He is still (23rd March) in the hospital, but intends to leave this in a day or two.

CASE II.—CHIONYPHE CARTERII AFFECTING THE RIGHT FOOT; AMPUTATION; RECOVERY.

On the 6th October, 1866, a Gosain beggar named Kama, aged about twenty-five, an inhabitant of Tosur, in the Futtehpoor district, was admitted into the Hissar Dispensary.



Case II.

Previous history.—When in his thirteenth year, a hard swelling appeared in the middle of the right heel, which softened, suppurated, and burst, giving exit to a venous discharge which, he says, contained bluish colored granules, then swellings next appeared in the different parts of the sole of the foot, and gradually extended to the dorsum and its sides.

At *present* he looks emaciated, but with the exception of the extreme enlargement, (the largest I have ever seen), and pain in the diseased foot, he suffered from no organic complaint.

A drawing of the foot, herein annexed, will show the ravages of the disease much better than any description can convey.

The measurement of the foot was:—

Length	..	..	..	12½ inches.
Round the toes	..	..	..	15 "
Do. instep	..	..	..	19 "
Do. heel and ankle	..	..	..	19½ "

I amputated the leg below the knee, under chloroform, by a single flap on the 24th October, 1866. No blood was lost, for the arteries were well secured by pressure in the popliteal space, but there was considerable oozing of venous blood, which ceased when the stump was dressed. The wound healed by the first intention, and the patient was discharged on the 4th December, 1866, forty-two days after the operation.

CASE III.—CHIONYPHE CARTERII AFFECTING THE RIGHT HAND; AMPUTATION THROUGH THE FOREARM; RECOVERY.

Khammanoo, aged thirty, a Bagree Jaut, and a resident of Mahessur, in the Jyepore territory, was admitted into the Hissar Government Charitable Dispensary on the 10th April, 1866.



Case III.

Previous history.—About three years ago, a blue spot was observed near the index finger of the right hand, on its palmar aspect. This spot continued in the same state for a year without interfering with his daily vocations. Afterwards, a fistula formed on the dorsal aspect of the finger, but within twelve months, before he presented himself here, other fistulæ formed; the size of the hand increased; and the pain became so agonising that he began to take opium to deaden it.

Present symptoms.—The right hand exhibits a dozen fistulous openings, through which ooze out the characteristic blue colored granules; the hand swollen; and below the wrist measured ten and a half inches. The fingers are deformed, being shrivelled and small. There is severe pain, of which the patient complains most bitterly; his general state of constitution was perfectly good. As the state of the patient's health warranted an operation, the limb was amputated on the 11th April, 1866, through the middle of the forearm, under the influence of chloroform. He was discharged cured on 2nd June.

The accompanying sketch will convey a better idea of the state of the hand than any description can.

CASE IV.—CHIONYPHE CARTERII AFFECTING THE RIGHT HAND; AMPUTATION; RECOVERY.

Dharrah, aged fifty, a potter, a resident of Khetree, in the Jyepore district, was admitted into the Government Charitable Dispensary at Hissar on the 16th May, 1866.



Case IV.

Previous history.—About two years ago a small pimple was observed on the right ball of the thumb, which remained dormant for about a year; then several fistulous openings formed, and discharged a granular blue substance. The fingers contracted, and the pain began to disturb him. He therefore, as is usually the case, commenced taking opium. His general health being good, the limb was amputated on the 17th May, 1866, through the middle of the forearm.

The wound united by the first intention, and the patient was discharged cured on the 5th July, 1866. A sketch of the hand accompanies this.

REMARKS.

It is a curious circumstance that, with such a diseased mass as the above, the constitution remained unaffected. On account of the dull aching, sleep is disturbed, and appetite impaired, which cause a haggard expression of countenance and emaciation; but on the removal of the part, the system rallies in a wonderful

The cause, whatever it may be, that gives rise to the introduction of miscellaneous fungi in the naked foot, must have operated

and more energetic prophylactic than the lymph, worn out in

Notices to Correspondents.

The Indian Medical Gazette.

in the publication of many of their writings, and the entertainment to which others have been subjected. He can only say in palliation that when he received charge of the paper, it was on the condition that the number originally proposed for each number (twenty-four pages), which had been almost always exceeded under his predecessor, should be strictly adhered to. This Procrustean rule has often obliged him to defer the publication of valuable papers, which were too long, or not long enough, and to publish others of less interest, which happened to fit the available space. For the same reason a rather ruthless censorship had been found necessary in other instances, in order to bring the contents of each number exactly within the twenty-four pages.

The ex Editor is but too well aware that these are not the only shortcomings with which he can be charged; but he will say no more on a subject which is probably of small interest to his readers, and which cannot be a gratifying one to himself. Before finally laying down his pen, however, he cannot but regret that communications so little use is made of the *Indian Medical Service* by the Medical Officers in other Presidencies, as a channel for publishing the results of their experience. That most of the contributors to its pages should belong to the Bengal Presidency is of course natural; but it has never been the object of the publishers to make the paper the organ of the profession in any one section of India (whether political or geographical) *par excellence*. Were the want of contributions from the sister Presidencies caused by the existence of similar papers in Madras and Bombay, it would be a subject of congratulation to all who are interested in the welfare of medical science. But this is not yet, neither are there, so far as we know, any grounds for hoping that it soon will be, the case; and until it is, until each Presidency can boast a monthly medical paper of its own, we hope to see our pages with no more to show that they have not the *Record*, but, as it professes to be, the INDIAN *Medical Gazette*.

DISTRIBUTION OF PRIZES AT THE MEDICAL COLLEGE.

THE annual distribution of prizes at the Medical College of Bengal took place on the 23rd of April last, Sir Richard Temple, a fit representative of Anglo-Saxon energy and progress, occupying the chair. We confess that we do not envy those who can listen on such occasions without emotion. Year after year the thrilling tale is told. Year after year the beneficent scheme expands, in spite of the short-sighted who gave to India the liberal medical education which she now [illegible] blessed. Could he now look upon these yearly scenes of his creation, could David Hare see the fruit of *his* labours, would [illegible]

[illegible] sowing the seed of sound medical knowledge, is as active [illegible] to those glorious anniversaries, when it is the privilege of our [illegible] It is to her *medical* colleges and schools that England is [illegible] founding the bond of union between herself and her conquered subjects. It is through the alumni of these colleges and schools, who are being annually sent to take charge of dispensaries in [illegible] that this bond is being cemented.

England looks to her sons, who occupy professorial chairs at these institutions, faithfully to discharge their trust. [illegible] country's expectations. These have passed away, but only to [illegible] and with reference for their motto, the "Onward, Onward, Onward" [illegible] "Onward, Onward, Onward" [illegible] our Macnamaras and our Charles, and a host of others." With such men at the helm, the good ship, which was launched three and thirty years ago, and whose progress was signalled last Thursday week, however much she may be occasionally endangered, compelled to sail close to the wind when it is adverse, or unhesitatingly to luff when it blows very hard, the good ship will never put back, nor pause in her career, but will eventually reach her destined haven, laden with the fruits of her journey, and ready then to yield to others the management of the [illegible] is approaching when the entire education of the masses may safely be entrusted to the graduates, who have been taught at the Medical College.

Progress, vital progress, is stamped on every page of the [illegible] is one point, however, on which we venture to express a difference of opinion, *viz.*, the proposition to supply the [illegible] serve as manuals. We cannot help thinking that this would be a [illegible] decidedly object. There are indeed some subjects which are common to all countries, which are not affected by heat [illegible] unaltered, as well in one language as another. Chemistry, for example, is a subject of this kind; but the practice of medicine, on the other hand, varies materially in different [illegible] comparatively unknown in Europe, whilst several of those, which have but a slender footing there, are intensified in India. There is so little of *correspondence*, (as the French idiom has it), [illegible] fail to convey to the mind of the native student, in this country, a description of the diseases which pass in review daily before [illegible]

most original thinkers. Why then should we not avail ourselves of this qualification? Why not make use of the accomplishment [illegible] Sub-Assistant Surgeons [illegible]? [illegible] we would say that a manual on the "Principles and Practice of Medicine" carefully composed by either a native teacher of that subject, or any well-informed graduate of the University who had kept himself *au courant* with the medical literature of the day, would be a far more valuable guide to the young native doctors, who at present leave our medical institutions without anything beyond the notes of their lectures, than the best translation of the best English book on the same subject. We confess to cherishing the hope that the day is not far distant when original manuals for our vernacular classes will issue from the press, worthy, in their way, to take rank with the manuals which are now common to our schools at home. Encouragement only is required. If this be offered, we have every reason to believe that there are those who will step forward and commence the undertaking. If we are not mistaken, a native graduate is, at this moment, engaged in preparing a vernacular treatise on the practice of medicine.

We have said that we believe the scheme of translations to be a backward movement. If it be thought desirable to give original manuals to the English class students, treatises on the several subjects of their educational course, which are intended to supersede the necessity of the young men burdening themselves with so many expensive monographs,— surely, if European professors can undertake to do this, as Dr. Charles Macnamara in Bengal and Dr. G. Smith in Madras have done, and as others propose doing, it is not too much to expect the same from our graduates of Calcutta? The translation scheme was suggested many years ago, both here and in Bombay, and, if our memory does not deceive us, proved to be a failure. We trust that very careful enquiry will be instituted as to the possibility of getting original treatises, before action is taken with a view to providing for the translation of English works. Dr. Chevers made special mention, to the Chairmen, of the eminent native teachers, Moulvie Tameez Khan and Baboo Ramnarain Doss. Will not these distinguished native gentlemen add still further lustre to their reputation? They have multifarious duties we know; and, in an exhausting climate like ours, it is difficult to accomplish any great additional amount of labor. At the same time, the road to eminence, steep and rugged as it is, cannot be trodden *without* exertion; and the goal is surely worthy of the effort?

GOOD SERVICE PENSIONS

[illegible] Her Majesty has been pleased to confer a good service pension on Deputy Inspector-General of Hospitals John Campbell Brown, C.B., Bengal Medical Establishment. Dr. Brown is a worthy successor, in the receipt of this pension, to Major General Fordyce of the Bengal Artillery, who will now enjoy the much-coveted pecuniary reward of a long Military career—the Colonel's allowance, or off-reckonings.

Agreeably to instructions contained in the despatch from the Secretary of State for India, the Military services of Dr. Brown have been duly specified in the *Gazette*. We congratulate our honored *confrère* upon the proud distinction thus accorded to him. His services in the field date from the Affghan campaign, in 1840, to the siege and capture of Lucknow in 1857, and well does he deserve this crowning mark of his sovereign's favor. He has for several years enjoyed the proud position of Honorary Surgeon to Her Majesty. He now receives, at her hands, a more substantial recognition of his services. We believe that an opinion obtains, in the profession, that this pension will be withdrawn, under any circumstances, on the recipient's retirement from the service; but this is an error. It is distinctly laid down, in the despatch referred to in the *Gazette* under notice, that "ordinarily the good service pension will be conferred upon officers of the [illegible] *will also be considered eligible for them;* and, in illustration of this, we would observe that there are several Medical Officers, of Her Majesty's British Forces, who were admitted to the receipt of the pension long after they had left the service. Whether a Medical Officer, who, as in the case of Dr. Brown, receives a good service pension whilst still on the effective list, would be compelled to give it up on retirement* *in the event of* [illegible] was a question which it was apparently deemed necessary to refer home for orders. Upon this reference the Secretary of State for India decided that, if a Medical Officer is entitled on retirement to the highest scale of pension from Government, or to the pension of an Inspector-General or Deputy Inspector-General of Hospitals under the new rules, enjoying, in each case, an income approaching the Colonel's allowance,—that then the good service pension must be relinquished. Dr. Brown's retention, therefore, of his new honor ceases with his retirement.

MEDICAL SOCIETIES.

We [illegible] to the very admirable parting address delivered by Dr. Chuckerbutty, when resigning the Chair, on the 10th March last, at the annual meeting of the Bengal Branch of the British Medical Association. Dr. Chuckerbutty ably pointed out the utility of such an Association, what opportunities of usefulness were brought before it, and how much not only the profession, but society generally, benefited by its operations. "Had such an association existed from the dawn of our profession, it is probable that we should have had many more facts than we have, and far less confusion." Dr. Chuckerbutty truly added that "if any substantial progress is to be made by these associations, they must be [illegible] and way, we venture to [illegible] than

* [illegible] *I. M. G.*

it is? It is not a mere friendly gathering at the dinner table, where professional discussion degenerates, when the cloth is removed, into a *post-prandial* desultory conversation of perhaps an hour's length, but the scene of real intellectual toil, where the faculties are brought unclouded into the arena of enquiry, and where the leading professional questions of the day are investigated with the zest of genuine students; where men meet, honestly solicitous to promote true scientific and philosophical research, and to raise the profession above the condition of mere drudgery,—a level to which the practice of quacks and charlatans tends to reduce it. It is the privilege of such associations to endeavour to raise the *tone* of the medical profession above that standard at which unhappily *the world* is too apt to estimate it. As a General is measured by the result of a great battle, so is a Doctor by that of his draught or his pill. But whilst the former gets credit in society for other than mere military accomplishments, it is very questionable whether the latter does so for anything beyond his physic! We believe that quackery is, to a great extent, the cause of this. There is no profession in which the pretender is so likely to thrive as in ours. Send, cries suffering Dives, send for "the Doctor"—a generic name, including many types, ranging from Hippocrates to Hahnemann. And the pretentious quack is often preferred by Dives to the skilled physician. It was necessary for that prince of charlatans, St. John Long, to kill more than one patient before the world every dreamed of his being a quack, and even then his popularity was not perceptibly lessened. When called to account for his successive murders, (for in truth they were nothing less,) he published a volume proclaiming himself a martyr in the cause of humanity! A monument, bearing an inscription testifying to his worth, was raised to the scoundrel's memory; and it is said that, even yet, there are to be found, in English society, intellectual women whose eyes become bright with tears at the very mention of his name. But then St. Long was endowed by nature with easy ingratiating manners and a persuasive tongue, an imposing carriage, and a musical voice; with personal advantages, in short, which too frequently constitute the principal stock-in-trade upon which their fortunate possessor depends, for advancing himself in the great race of life, whilst his far abler, but less graceful, compeers, who started with him, are left behind. The wealth of some of these fascinating sharks testifies to the readiness with which their pills and potions—the panacea for every human ill—are swallowed by a gullible, because uninformed, public. Of what avail are Medical Councils and "prosecutions under the Act?" Quacks find their way to the front so long as the public encourages them. And these men, with the unthinking masses, give a stamp to the profession Unhappily, too, the public have some grounds for refusing to give to the profession that status to which, were it composed only of those who ought to be allowed to enter its ranks, it should be entitled. A liberal education is not sufficiently insisted upon. A butcher once said to a London Surgeon.—"*My* father was a journeyman butcher, *I have* been a master butcher, and now I wish *my son* to be a gentleman butcher." We knew a medical practitioner who did not at all mind informing society that his father was a "tatter!" Now we have not the slightest objection to the sons of "men of low degree" being admitted into our profession, but we do insist that the sons themselves shall be, not only professionally, but liberally, well educated, and that they shall have some notion of the laws of good society. We do not require that the sons of Æsculapius should study in the school of Lord Chesterfield, (where, according to Dr. Johnson, they would acquire the manner of a dancing master, and the morals of a————) but in the practice of so noble a calling as ours, the paramount aim of which is to alleviate human suffering, it is of the utmost importance that its professors should be, in the truest meaning of the term, *gentlemen*.

But we are deviating somewhat from our subject. The society, whose claims to professional support were so ably advocated by Dr. Chuckerbutty, is striving, whilst it informs the profession, to educate the public. Its task is only begun; and, so far as it has gone, it has done well, but help is urgently needed. Will not more of the several hundred medical officers scattered throughout India assist in the good cause? We beg to assure our friends that their labours will not be thrown away. The humblest acolyte in the temple of science, the youngest Sub-Assistant Surgeon toiling in one of the remotest outposts of India, may find his exploits or his investigations chronicled when and where he least expects them. The Bengal Branch of the British Medical Association has found a fitting place amongst the societies at home. Its operations are watched with solicitude by the parent whose name it bears. The honey which it collects is being indented upon by the working bees of the professional hive in England and on the Continent. In happy accord with the authorities of the Medical College Museum, it is a pathological and clinical society combined. All contributors may depend upon their contributions finding, as before stated, their appropriate corner in the Museum, whilst a brief history of all the cases is chronicled in the catalogue, an abstract of the most important of each being, moreover, from time to time, recorded in the *Gazette*. It is a matter of deep regret that the society is so little supported by the native practitioners of Calcutta. We were greatly in hopes that the *entente cordiale*, which it was expected would exist between different classes, would have grown with the growth of the association, and that thus the intentions of its founder would have been abundantly fulfilled. And we will still cherish the hope that our native friends will see the importance of rendering their aid in what should be a joint endeavour of the whole profession.

We cordially endorse all that Dr. Chuckerbutty has said on the subject of vernacular medical education. It is through this that the masses will be reached; but a higher kind of education will always be required. The Sub-Assistant Surgeon must still be created; and these undoubtedly are the men to whom India must look eventually for the education of her "country doctors." We should therefore, on this account also, like to see them taking a more active part in medical societies, joining their European *confrères* in the society which is now working, and creating others, themselves taking the lead, for the diffusion of practical knowledge amongst those who are sent forth to take the place of the kobirajes and hakeems of Bengal. And, under European and Native guidance combined, we cannot but believe that,—with increased activity in working out the hidden treasures of Eastern pathology and therapeutics, and in the encouragement of closer professional union among themselves, by the establishment of these institutions in "correspondence with the learned bodies of Europe and America—the profession in India might readily achieve a degree of appreci-

SYPHILIZATION

grounds, we venture to regard the result of the experiments, [illegible] factory. Men can no longer hope to indulge in the sin, which leads to such constitutional havoc, without suffering the terrible [illegible]

It is well that this question has been finally settled. Syphilization [illegible] to be an eminently successful remedial measure, as its Norwegian Professors alleged it to be, it probably would have found supporters, and, in time, might have proved a boon, [illegible] which were indulged in, have not been realized; and it remains now, therefore, simply to record the opinions upon which the inutility of syphilization has been based.

[illegible] London were, by permission of the governors, placed at the disposal of Dr. Böeck, of Christiana, with a view to his demonstrating before the profession in England the value of syphilization, as a remedial agent, in the cure of constitutional syphilis. The result of Dr. Böeck's operations was recorded by Messrs. J. R. Lane and Geo. G. Gascoyen; and this, together with a *resumé* of Dr. Böeck's opinion as to the manner in which "he considers this treatment influences the syphilitic disease," was given in a paper, read by those gentlemen, at a meeting of the "Royal Medical and Chirurgical Society" held in July, 1865. [illegible] more or less fully carried out," were given; after hearing which, there could be but one verdict amongst the whole audience, *adoption*." Several members expressed their opinions for, and against, the treatment. Amongst them were Mr. Walter Coulson, Dr. C. Drysdale, Dr. Marston, Mr. Burwell, and Dr. Colombati Meredyth. All agreed that, though syphilization *ap-* [illegible] that recovery took place, in consequence of the improved hygienic conditions, under which patients treated by it are placed. Both the reporters were decidedly of opinion that, *no* syphilization did not protect the patient against a fresh sore, [illegible] much personal discomfort and loss of time, and to cover his-

with matter from a hard sore, also of Dr. Pick, of Vienna, and [illegible] clear, *viz.*, to anticipate, by treatment, the constitutional disorder which *may* supervene upon any kind of chancre, be it [illegible]

Whilst, however, the ardent professor (Böeck) of syphilization [illegible] able to place on record the rapid advance which is being [illegible] and in India. We publish in the Supplement the Bill recently introduced by Mr. Maine into the Council of the Governor-General of India, for the purpose of making laws and regulations. It was referred to a Select Committee, with instructions to report on it in a week.*

"The object of this Bill is to diminish, and, if possible, to extirpate, venereal disease in Indian seaports." We shall rejoice, indeed, if this object is, though only in part, fulfilled; and we cannot refrain from congratulating [illegible] to accrue from the introduction of so wise a measure. It is not, perhaps, going too far to say that, even at home, all objections, on the score of morality, will vanish in the course of a very few years; nay, that in another decade, the law, which is now being put forward as tentative, will become, in spite of the well-intentional opposition of mistaken moralists, the established law of even Christian England.

APPOINTMENT

[illegible] Surgeon D. F. Rennie (well known to the public by several cleverly written [illegible] humble friendship of his immediate subordinates by his gentlemanly deportment and readiness at all times to attend to their [illegible]

The weather is getting gradually warmer, and the fortunate [illegible]

Meeting of the Bengal Branch of the British Medical Association.

THE Fifth Annual Meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College at 8 P. M. on Tuesday, the 10th March, 1868. Dr. S. G. Chuckerbutty, President, in the chair.

The proceedings of the business meeting held on the 5th February were read and confirmed. An abstract of the cases and papers read at the ordinary monthly meetings during the past year was also read by the Secretary.

Dr Chuckerbutty, in resigning the chair, said:—"It is now my duty to retire from the post of President, and to introduce a successor. In the gentleman whom you have elected you will have an able and energetic officer, who, I feel sure, will infuse a new life into all our operations, and compensate for the shortcomings of the past year.

The year which has just elapsed has not, however, been without results, as will be evident from the proceedings published in the *Indian Medical Gazette*. It is nearly five years since the Bengal Branch of the British Medical Association was established: and it is satisfactory to note that it has proved at least one thing, *i. e.*, that there is no insuperable difficulty to the success of such an Institution. If each member of the profession did his part towards it, there is no institution in the country which offers a greater opportunity for usefulness Important medical questions concerning pyæmia, osteomyelitis, cholera, small-pox, fever, dysentery, syphilis, drainage, water-supply, hospital construction, the status of the medical profession, &c., which are continually forcing themselves upon the public, can be nowhere else discussed with equal advantage. Had such associations existed from the dawn of our profession, it is probable we should have had now many more available facts than we have, and far less confusion. It is only comparatively lately that the value of such associations has been understood, even in Europe and America. In this country they are scarcely yet in their infancy. But if any substantial progress is to be made, they must be carefully nurtured and supported. Considering their vast influence on civilisation, they are deserving of every encouragement. They are calculated not only to advance science, but also to lead important assistance to Government on many occasions. They excite an interest in the pursuit of the profession which would not be otherwise felt, and lead to investigations which would not be otherwise undertaken. That being the case, the wonder is that we have not got more than one such association. In Bengal alone there is room enough for three—an English, a Bengali, and an Urdu, for the three different classes of men educated in the Medical College. Up to the present there has been very little combined labor; and whatever there is, is obtained through the action of the Government Medical Department. That has its value; but it does not give us all that is wanted. In the nature of things, it is impossible that voluminous papers, even if sent in, could be all read in the midst of so many pressing duties, or published at the public expense; and besides there is no opportunity for discussing them, and so much of their value is lost. The combination that results from Medical Associations is far more satisfactory. Every one is allowed to express his opinions, and to publish his views to the world. The debates which follow create a warm interest on the subject, and every member returns from the meetings wiser and more instructed than he came. This, in itself, is a great boon, as it enables us to know each other more thoroughly than we otherwise should, and stirs up sympathies and friendships which would not otherwise exist. It is something to establish mutual goodwill and fellowship among persons who were strangers to each other before. It is something to learn the different views entertained on a subject by contemporaries in the same place. It is something to know the results of their practice. It is something to know their modes of treatment, favorite remedies and interesting cases of pathology. And it is a great thing for society that the men whom it trusts with the lives and health of its members, are not the mere drudges of a trade, but the earnest promoters of true science and philosophy.

There is much work to be done in the collection of facts, and every new fact made out is a gain to civilization. Whether it relates to the natural history of disease, to the nature and actions of remedies, to pathology, having more to the bedside than after death, to diagnosis, to new methods of cure, to new drugs, or to preventive medicine, its value is equally important; and there is no better way of promoting such enquiries than through the agency of an organized association. In the short time of its existence, our Association has already contributed something in this respect; and if it has failed to do more, it has shared the common fate of many older and more ambitious societies. We ought to be satisfied if we know only that we are humble workers, doing our part to the extent of our opportunities. We are but the sowers of the seed, the fruit of which will be gathered in due time by some future generation. Somebody must sow; and it is our turn to do it here. At the same time, we cannot do this, and discuss scientific questions, without immensely profiting ourselves. If we are only convinced that our skill and efficiency must be measured by the extent of our knowledge, we shall have achieved one great triumph over routine and the blindness of theory; and we shall have been made sufficiently unselfish to admit that we have all much to learn from each other. It is in this spirit that I would urge our members to review our past operations, and to give us their support for the future. It is not right that where there should be many, a few only should toil and labour. Our number is sufficiently large to do much good if the attendance at our meetings were larger; and our funds are encouraging, if not highly prosperous. In time we may hope to possess a proper location and a library of our own. As our members become more numerous and active, we may also be able to maintain a journal of our proceedings, which shall not be inferior to the one we had to discontinue last year.

As I have referred to the three classes of medical men, let me speak a few words regarding the relation between the Native Medical Profession and the Universities.

In one way the Universities hardly meet the medical wants of the country. As the nation is gradually awaking to the superiority of European medicine, the demand for medical men educated in our colleges is daily on the increase. The number of practitioners passed by the Universities is too small to keep pace with that demand, and their pretensions are too high to allow of their services being generally available to all classes of the community. The Universities aim at securing a high standard of education, and a class of English-speaking practitioners who shall not be inferior in attainments to the graduates in Arts, Law, and Civil Engineering. This is very good, for it secures a high place for the profession, the members of which should act as so many centres of civilization. But the very superiority of the education necessarily limits the admissions to this class, and the vast majority of them belong to the lowest grade, or Licentiates. Indeed it has been a frequent subject of surprise, how few seem to care to aspire to the higher medical degrees, and it has been questioned whether the institution of those degrees was not premature. I believe the proper way to get an answer to these questions is to ascertain the native feeling upon the subject. The difficulties of the examinations have nothing to say to it. There are many native medical practitioners who are competent to pass any examination, but who do not wish to be M. Ds., as they get on very well without any such title In this country every medical man is called a "doctor," whether he be a surgeon, physician, or apothecary; and no precedence is allowed on the score of academic distinctions. This is the case here even with graduates of the British Universities. Consequently there is neither honor nor remuneration to be gained by the possession of the degree of M. D. In the public service no distinction is made between an M D and an L. M. S., and promotion goes by seniority. In private practice, expectations and anxiety are directed to rank and high fees, and many a man who has no University degrees, enjoys a popularity second to none. This, it is to be hoped, will be remedied in time, but for the present it exercises a great influence upon the minds of many, who very naturally hang back from examinations which can confer on them no apparent advantages.

But the truth is that the growing demands of the country are not for M. Ds or M. Bs, but for a large supply of practitioners of a lower class. There seems to be now a universal cry for more medical men, and every one who follows the profession of medicine finds employment enough to support himself with credit. As a necessary result of all this, more and more candidates are entering the profession every year. Our English and Vernacular classes are crowded with students anxious to qualify themselves in every branch of study, and to make themselves useful, not only as physicians and surgeons, but also

Schools which have been established now in so many parts of

education should be complete in all its parts, as it is in that way

over the ancient systems of medicine of this country. For this

advantages than ordinary therapeutics; for, as they are obvious

is about to be removed, and which, I trust, will never again occur.

professional education should be fully as sound and comprehensive as that of the English-speaking classes, if efficient medical aid is

rinal that they are not connected with the Universities. The

the country can never be exaggerated. Great additions must be made to this class; for, taking the whole of our present and

leaving large gaps to be filled up; and the sick sometimes have many miles to travel ere they can reach the nearest doctor. There

in the first instance, of the very best description, but there are

epidemics, even England is glad to avail herself of the services of apothecaries' assistants and unpassed medical students, although at ordinary times she has a redundancy of qualified medical men. How much greater then is the necessity here of sending forth into the country qualified recruits to fill the ranks of the profession, since, even in times of peace, there is a great scarcity of them; and in seasons of war, famine, or epidemic visitations, which are here of such frequent occurrence, they cannot be improvised at all. (*Vide* Revd. J. Long's letter.)

The function of the Universities is to educate a class of

valuable servants to the State.

The function of the Vernacular Schools is to create a class of working men for the people who will form the bulk of the medical profession, and occupy ground untouched by the University graduates. At the same time the Universities must exercise a certain influence over the Vernacular practitioners, who will have for their teachers and official superiors the University men.

I should like therefore to see the graduates of the Universities at once take up their true position, which they can do by co-operating with this Association, and forming, under their

and it will be a happy day for India when it does. Mean-

birthright or adoption, should put his shoulders to the wheel, and see that, while he earns a living for himself, he also does something to advance the cause of progress. If this were done, our Association would not be deficient in numbers, nor powerless for good. But I will detain you no longer on this topic,

read. So I will thank you once more, and resign the chair to well known to us as a former President."

Dr. Chevers, on assuming the chair, said that he regretted that it was his turn to succeed to so able a President as his friend Dr. Chuckerbutty. He, however, thanked the members heartily for the honor which they had done him in re-electing him to the Presidentship, a post which he had already occupied some years before. As there were many valuable papers to be brought forward, he would not inflict a speech upon the meeting, but would content himself with expressing the pleasure which he felt in again meeting the members. He then exhibited two photographs of casts, taken from moulds found in Pompeii, of the bodies of persons who had been overwhelmed by ashes before they could escape; and alluded to similar moulds which had been found at Cuba and elsewhere.

The first subject which he discussed was that of scrofula and phthisis in India. Previous to 1840, phthisis had almost escaped notice in this country, owing, among other causes, to the difficulty of obtaining autopsies, the comparative neglect of auscultation, and the liability of the disease to be masked by abdominal affections. It became a recognised doctrine that tuberculous diseases were rarer among the inhabitants of tropical and sub-tropical climates than among those of temperate latitudes, and this was attributed to an idiosyncrasy among the natives of the former; to their open-air life, and the less

quantity of vegetables in their diet; to the greater activity of their cutaneous secretions, due to the warmth of the climate; and to a supposed antagonism between tuberculosis and malaria. In 1848, however, the late Dr. Allan Webb called attention to the fact that he had observed phthisis among the inhabitants of the lower Himalayas and of Burdwan, and that it had been noticed by Dr. W. A. Green, at Midnapoor and Howrah, in 1844-45, and by Dr. Goodeve, at Cawnpoor, in 1845. In 1854 Dr. T. W. Wilson had called attention to the frequency of "tubercular disease in the East," in the *Indian Annals of Med. Sc.* From 1857 to 1867 the records of the Medical College Hospital showed that 454 Hindus and Mussalmans, and 351 Christians, had been admitted for phthisis, and that of these cases 285 and 139 respectively had died. From 1860 to 1867, 729 cases of phthisis had been treated as out-door patients at the same hospital.

There is reason to think that many natives of India, tainted with constitutional scrofula, die early from bowel complaints. Allowing for this source of fallacy, it must, however, be conceded that scrofula and phthisis, though more common than generally suspected, are somewhat rare in India, as compared with colder climates. The comparative rarity, in India, of strumous glandular enlargements or cicatrices was ascribed by Dr. Allan Webb to the greater frequency of bowel complaints, the glands of the intestines becoming the channel for the elimination of the tuberculous material.

Dr. Ewart then proceeded to review the specimens of tubercular disease contained in the College Museum, giving details of sixty preparations which illustrated his views. He said that phthisis and struma, though common enough among Hindus and Mussalmans, and still more so among Eurasians, were still rare in India as compared with Great Britain. His observations on the subject have extended over fourteen years, and had been made upon the Natives of Lower Bengal, Behar, Rajpootana, Marwara, Ahmedabad, and Surat in Western India, and Madras, and upon the aboriginal tribes of the Nilgiris. He had found traces of tuberculous disease, more or less extensive, in the lungs, mesentery, or intestinal follicles, in a very large number of those who died of bowel complaints, although there was nothing, *a priori*, in their history to rouse a suspicion of tuberculosis. Had these patients lived in temperate climates, the tubercular deposit would either have been absorbed or cretified, or would have increased in quantity, while degenerating in quality, and have thus set up fatal mischief in the affected organs. But, in India, the proclivity to bowel complaints favors the death of the patient from those affections before disorganization of the lung has had time to set in; while the co-existence of the tubercular diathesis renders the bowel complaint peculiarly uncontrollable. It was common

to India in hopes of checking the pulmonary affection, soon carried off by abdominal disease. Had the latter not intercurred, Dr. Ewart believed that the lung disease would not have been materially arrested. Where the lung disease appears to be postponed by a change from England to India, this is generally only due to the transference of the morbid action to the bowels, leading

to frequent attacks of diarrhœa. Dr. Ewart believed that tubercular deposit in the lungs of Europeans were more seldom absorbed or cretified in India than in temperate climates, owing to the deteriorating effects of heat, moisture, malaria, animal food of poor quality, and the difficulty of taking proper exercise during many months of the year. These depressing causes more than counteracted any good effect likely to be derived from a warm climate in the abstract. Dr. Ewart summed up his experience on this subject in the following propositions :—

1*st*.—Phthisis occurs among all classes in India—imported Europeans, Hindus, Mussalmans, Jews, Armenians, Eurasians, East Indians, and others of mixed parentage.

2*nd*.—Fully developed phthisis, causing death by disorganization of the lungs and of the intestinal glands, is rarer in India than in Europe.

3*rd*.—Scrofula, without tubercles in the lungs or elsewhere, but causing fatal diarrhœa or dysentery, is much more frequent than is supposed in India, both among Natives and Europeans, and much more common there than in Europe.

4*th*.—Tubercular disease of Peyer's patches, or of the solitary glands of the large intestine, causing ulceration and death by asthenia, without any sign of deposit of tubercle in the lungs, is often met with in India.

5*th*.—Many scrofulous Europeans and Natives die in India from bowel complaints caused by the tubercular diathesis, after tubercle has been developed in the lungs, but before acute phthisical symptoms have appeared.

6*th*.—Tubercles are often found in the lungs of Natives who have died from cholera, fever, hepatic abscess, dysentery, or diarrhœa.

7*th*.—The advantage of sending Europeans, with an inherited phthisical diathesis, to India, or to any depressing and relaxing miasmous climate, is very problematical.

8*th*.—The benefits hitherto believed to have been conferred on natives of Great Britain and other temperate climates, in whose lungs tubercle has already been deposited, by transfer to the plains of India, are not supported by modern experience on the spot.

9*th*.—Where disorganization has already begun in the lungs, even to a small extent, the change from temperate climates to India is positively and obviously injurious.

The next subject which Dr. Ewart brought forward was that of syphilitic "gummatous" tumours, of which he exhibited three series of specimens from the College Museum,—one was about the size of a grape, and was found in the right septo-thalamus of a Hindu, aged thirty, who had suffered from syphilis, was admitted into hospital with hemiplegia of the left side, and ultimately died comatose. The second case had occurred in the General Hospital under Dr Vans Best. The patient had suffered four years before from syphilis, for which he had salivated himself sixteen times. He was admitted into the General Hospital with chronic ulceration of the larynx, and died "from depression and failure of the heart's action," not from apnœa. In addition to extensive ulceration of the larynx, a gummatous tumour, as large as half a hen's egg, was found in front of the bodies of the second and third cervical vertebræ, springing apparently from the anterior common ligament. A similar tumour was attached to the inner face of some of the lower costal cartilages. In the third case a gummatous tumour, as large as a hazel-nut, was found in the left lung of a patient who died of pelvic cellulitis. The College Museum also contains a heart, in the right ventricle of which are two syphilitic gummata,—one about the size of a grape, the other as large as a hazel-nut. There is also contraction of the mitral orifice, and an aneurism of the left ventricle.

Lastly, Dr. Ewart brought forward two specimens of diphtheria which occurred during the past year in the Medical College Hospital, the subject of one being a child, that of the other a man of thirty-three. In both death supervened from asthenia, occasioned by the overwhelming influence of the poison, and not from the mechanical impediment to breathing.

(To be continued.)

THE Government of Madras has authorized the payment of the sum of Rs. 15,075 to the Registrar of the Madras University, being the amount of remuneration assigned to the Examiners in the Matriculation and First Arts Examinations in December, 1867, and the Bachelor of Arts and Bachelor of Law Examinations in February, 1868, in that Presidency.—*Madras Standard, April*, 1868.

Reviews.

The Calcutta Journal of Medicine : Edited by MOHENDRO LALL SIRCAR, M. D.

IT has been said, and we fear with truth, that, as a rule, a Bengalee does not work after he leaves school. Under the influence of the stimulus of prizes, of University honors, or of a lucrative appointment, he labors with a zeal and a success which has created considerable astonishment in our Western Seminaries of learning; but the object of his industry once gained, he is too apt to degenerate and become lazy. There are, indeed, some honorable exceptions, and we could point to more than one notable instance where the national intellect is being vindicated from this reproach. Work, persistent work, with patient enquiry, and a careful uncolored chronicle of observed facts, will lead, in whatever line of study these are brought to bear, whether by Native or European, to useful if not to brilliant results. Hence, although we may decline to agree with him in the principles of his creed, we cannot but commend the spirit and perseverance which have induced Dr. Mohendro Loll Sircar, single-handed, to start a "Journal of Medicine" in Calcutta, a periodical in which, although the "*similia similibus curantur*" law, and the infinitesimal posology of Hahnemann will be recognized as the most advanced points yet reached in the domain of Therapeutics (in the utterance of which sentiments Dr. Sircar enunciates his disbelief in all that he was taught at his *alma mater*), still, as his professed "object is simply and solely the advancement of Medical Science, and the diffusion of sound knowledge of the laws and conditions of health," we will cherish the hope that our author will grow wiser as he penetrates deeper, and that we may yet be enabled to welcome him back to the ranks which he has, temporarily only let us hope, and not irrevocably, deserted.

But Dr. Sircar's Journal is not devoted, exclusively, to the discussion of homœopathic questions. It deals with the "principles of hospital construction," and advances original and suggestive opinions on what should be done with the Medical College Hospital; it places before the public the experiences of intelligent Native gentlemen with regard to malarious fevers occurring in their districts; it glances at the Medico-Political questions of the day;—the efforts made by Sub-Assistant Surgeons to secure for themselves an improved official and financial position in society; the appointments of Sanitary Inspectors General and their value; the reformation of jails, and the establishment of an aide-memoire for India; and last, not least, it proposes to "publish, in *deva-nagri* character, the most approved Hindoo works on medicine, with translations of them into English." This last proposition, if successfully carried out, will supply a great want. So much of these writings is to be met with only in manuscript, that they are as a sealed book. A good English translation, such as an educated *Bengalee* Sub-Assistant Surgeon could furnish, would be invaluable to pure *savants* as well as to professional men; and we doubt not that, if Dr. Sircar will apply in the proper quarter, he will meet with the assistance which he solicits in the purchase of "good old reliable manuscripts." In closing this brief notice of Dr. Mohendro Loll Sircar's Journal, we confess we should wish to see it prosper in exact proportion as it keeps within the limits of rational medicine, and if its author wishes his bantling to be more generally fostered by the public, we think he would do well to make its contents more general, and to curtail the extent of its homœopathic disquisitions. Dr. Sircar will pardon us for these remarks. We make them in no spirit of bigotry, but from regard for a former pupil of the Medical College—for one who rises attained so high a position amongst the *alumni* of that noble institution, and whom we earnestly desire to see diffusing the blessings of orthodox European medicine throughout India.

"THE GREAT SULPHUR CURE."

On the Application of Sulphurous Acid, gaseous and liquid, to the prevention, treatment, and cure of disease. By JAMES HEWARD, M. D., KIRKCALDY. 7th Edition. Edinburgh. Edmonston and Douglas. 1868.

The great sulphur cure brought to the test and verdict of the new curative machine proposed for human bodies and ships' papers. By ROBERT THOMAS, Surgeon, R. [illegible]. Edinburgh. Edmonston and Douglas.

keeping up with it.

to destroy low organizations, to check vicious fermentation, and

the profession, as well as within its ranks. By a simple analogical process, Dr. Dewar, believing cattle-plague to be of parasitic origin, was led to attempt its cure by sulphur fumes.

once healthy; and not only so, not only did fresh cases of the disease cease to appear, but other diseases coming accidentally, as it were, under the influence of the fumes, were greatly bene-

was easy, the fact being pre-supposed that, however diverse in outward manifestations, "the grand essential point remains that

cases. [illegible] is wholesome, if the premises are sound.

Numerous experiments have accordingly been made; and if we are to [illegible] the cases recorded in these pages, (and they bear the impress of truth upon the face of them,) the powers of the acid over disease, either as fumes, or in the form of spray, must be very great. Cases of croup and diphtheria, of common cold and hoarseness, seem to be cured as if by magic; phthisis is benefited, and pneumonia relieved, by a few whiffs from the atherizer; while contagious diseases are prevented from spreading by [illegible]. But it is not to medical cases only, nor it would appear chiefly, that its uses are [illegible] "It covers and [illegible] there seems as great antagonism as between fire and vapour. The acid simply dries it up, and annihilates it." "In hacks, chilblains, running ears, excoriated nipples, open sores of every kind, it is invaluable; as a hair wash for scurf it is admirable; as a wash for ulcers, its healing powers are great; as a dressing for recent flesh wounds it is perfectly wonderful altogether." Numerous cases of these, as also an interesting one of ulcerated and bleeding piles, are cited in support of this statement.

[illegible] results of which will be enormous, or *nil*. Making all due allowance for enthusiasm, which is prone to make the inventors of "a new thing" overrate it, it seems clear that, judging from the cases [illegible] appended to the pamphlets, there is much that is valuable in the results already attained, and considerable ground for hope that the method may not be found to fail on further trial. It seems incredible, however, that it can accomplish all that is expected of it. If it does indeed prove "infallible in killing the poison of cattle-plague, pleuro-pneumonia, cholera, diphtheria, nearly all ulcerations of throat and windpipe, fever, asthma, asthmatic [illegible] by these agents, [illegible] we would begin, like Demetrius, to fear that "our craft is in danger to be [illegible] nation's gone." Seriously, however, the plan deserves an extended trial at the hands of the profession. It has been carefully worked out by its exponents. The theory on which it is based is at once simple, logical, and consistent. If true, the benefit which it will confer on mankind is incalculable. If [illegible], the sooner it is [illegible], and the more completely, the better.

[illegible] and we beg to recommend [illegible] Medical Society, [illegible] free and easy style, with considerable success, as intended "to [illegible]" It [illegible] its purpose, and, in spite of blemishes and mannerisms, speaks [illegible]

The doctrine expressed in these papers—though in them given to the world as a complete whole traced to its fullest consequences for probably the first time—is not a new one; [illegible] theory, from the very earliest times. Ulysses, Sir Lyon Playfair [illegible] the slaughter of Penelope's suitors. The Arab physicians, Celsus tells us, gave sulphur extensively in phthisis, as did Galen, Sylvius, and others; and Lord Bacon bears testimony to its use in lung diseases in his time. How they gave it is uncertain; probably as an electuary. Its use in the treatment of consumption has just been re-introduced into America by Dr. Churchill, who claims for the alkaline sulphites a peculiar control over [illegible] way now recommended is certainly as old as the time of Celsus. "Si vero vulva exulcerata est"* he says, a parallel case this to the bleeding piles. "sulphuri suffumigari debet;" and from his day downward we find sulphur constantly recommended in the treatment of disease. Quite lately the *modus operandi*, and general principles of the cure, have been to a great extent worked out by various independent observers. A few years ago Professor Polli, of Milan, enunciated the principle with great distinctness, substituting the sulphites [illegible] Bernard that the latter, while destroying and nullifying the [illegible] Following him, and indeed in consequence of his experiments, [illegible] subject, and with favorable results. In the late fever epidemic in the Mauritius, several observers seem to have found the sulphites of great use; and an interesting article in the *Edinburgh Medical Journal* for October last informs us that Dr. Fiddes of Jamaica has found them very successful in the treatment of yellow fever. It does not appear that either Dr. Dewar or Mr. Pairman was at first aware of these experiments; and the former is certainly entitled to the credit of having worked out the subject independently and alone. Still it is well that the profession should recognize and remember the other workers; and that if the world is to be regenerated, they should share, and share alike, in the honor and glory of the discovery.

We now leave the question to the profession. The mere fact that so many distinct persons have directed attention to the plan would seem to indicate that whatever pretestions are put [illegible] In truth, although, *per contra*, the numerous occasions on which sulphur is recommended by the old writers appear to make against it, as it is not probable that such acute observers, as many of them were, should have repeatedly used the remedy without clearly recognising its great powers, if such they be. [illegible] and we trust some of our Indian Surgeons will avail themselves of their vast opportunities to test thoroughly the usefulness or otherwise of the plan, and let us know whether it is to be hailed as the greatest blessing of the age, or consigned to the [illegible] †

AUTHORITY having been received from the Supreme Government for the commencement of a new University building in Madras, the local Government wish that the work be taken in

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* De Medicina lib. iv. Sect. xx.

† We [illegible] the [illegible] the results of the reviewer's own experiments in the application of this remedy, and we shall [illegible] that he will find the [illegible] others, [illegible] the [illegible] the test. We would take the [illegible] using [illegible] circumstances where thorough [illegible] and [illegible] not required. Nothing, in our experience, [illegible] As [illegible] we have a week, in the [illegible] them of the work during the [illegible] and [illegible] diminish the number of cases [illegible] Ed., I. M. G.

hand without delay. The Syndicate of the University have been accordingly requested to place themselves in communication with Mr Cunningham, with a view to the preparation of a new plan conformable to the requirements of the University, and adapted to the position which the building is destined to occupy.—*Ibid.*

THE question of raising the salaries, and of improving the position of the native doctors, dispensers, and other medical assistants, appears to have now attracted the attention of the Government of India, and the Government of Bombay has made some observations on this important subject. Of all classes of public servants, these is the most poorly paid. With a view to induce young men of position and of sufficient education to enter this department, the Bombay Government thinks it necessary that the condition of this class of servants should be at once improved, and their salaries augmented. The salary of the native doctors in the Civil Department ranges from Rs 15 to 20 and Rs. 30 to 40 a month when in independent charge of a dispensary. In Bengal the pay of the ex-students of the Bengali class of the Medical College, who are also designated native doctors, commences at Rs 20 a month. The salary of the native dispensers or compounders ranges from Rs 9 to 15 a month. This scale appears to have been fixed some thirty or forty years ago, and since then no revision in the salaries or improvement in the condition of those officers has been made.—*Pioneer, 15th April*, 1868.

Short Notices of Recent Books.

Review of the History of Medicine. By THOMAS A. WISE, M.D., late Bengal Medical Service. London: Churchill. 1868.

The author of these two volumes has undertaken an enormous task; and we are inclined to accomplish the end in view successfully, it is rather because of the vast extent of his subject, than from any want of energy or industry on his part. He has attempted to treat of the history of the art of healing from the most ancient period up to the present century, and our readers need not be told that such an undertaking would involve more than the lifetime of a single individual. In the work before us, which has been printed in Cork, and whose type and paper are of most inferior quality, Dr. Wise treats of the history of medical science under five separate periods. These, too, are arranged not according to chronological sequence, but rather in their order of progress from the purely empirical to the rational method. We cannot but think that such a scheme possesses many disadvantages, but we, nevertheless, will lay the author's classification before our readers. They are as follows:—(1) The primitive oriental period, in which the efforts of the Aryan race are reviewed. (2) The ancient period, in which the second or western branch of the Aryan race cultivated the *ars medendi*. This period embraces the account of the Greek and Roman systems of medicine, and extends from the time of Thales and Pythagoras to the time of Sextus Empiricus, or towards the end of the second century. (3) The transition period. In this we find a sketch of the Egyptian and Jewish systems, and of the decline of learning in Europe. (4) The restoration period, when learning began again to flourish in Europe, and the study of medicine was revived. At this date the sciences began to be studied by the ancient monks, and attention was given to the Arab translations of the classical writers. Finally (5), the philosophical period. This extends from the revival of literature and medicine in Europe, in the fifteenth, to the beginning of the nineteenth century. This is perhaps, of all the epochs, the most interesting to the student, since it was at this date that medicine travelled from the limits of rude empiricism, and assumed its foundation on the solid basis of anatomy and physiology. In dealing with the subject in each of these phases, our author is most interesting and introductive, and culls extracts from writers of all kinds. His strongest point, however, is evidently his acquaintance with Indian manuscripts, from which he frequently quotes. The testimony advanced from these sources is most attractive to the uninitiated; but it remains to be seen whether, in some instances, the author's statements are not open to serious question. However, the Indian student will find Dr. Wise's pages full to overflowing of ancient Hindoo and Brahmin lore; and though he will not learn much of the influences which operated in placing medicine in its present position, he cannot fail to profit by taking up the "History of Medicine" and scanning its pages.

The Stone Age by Sven Nilsson. Edited by SIR JOHN LUBBOCK. London: Longmans. 1868.

Although this work is not properly related to medicine, it is on a subject in which so many of our readers must be interested, that we desire to bring it under their notice. It is really a double work, since it contains, in addition to the text of the author, an "introduction" by Sir John Lubbock, which embraces an epitomé of the modern views of geologists as to man's age in the world. The introduction shows us that, from the first appearance of man in the globe up to the era of Christianity, four distinct races of human beings have peopled Europe, there being, *first*, the men of the first Stone Age; *second*, those of the second Stone Age; *third*, those of the Bronze Age; and *fourth*, those of the Iron Age. In the first, man was ignorant of the metals, and constructed weapons of unpolished stone. In the second he employed weapons of polished stone. In the third he used implements of bronze, and in the fourth he became conversant with the valuable properties of iron. Sir John describes each of these races, and gives a terse and lucid résumé of the evidence, geological and otherwise, on which the belief of our best archæologists is founded. Professor Nilsson's portion of the work constitutes the greater bulk of the volume, and is accompanied by numerous well-executed illustrations. The author takes up the men of the Stone Age in Sweden, and having described the rules they have left us of their habitations and industry, he compares these with the productions of savage races of the present day; and he traces the traditions of the Sagas and Scalas back to the period of the "men of Stone." His conclusion is that, originally, Sweden was inhabited by a race which, in habits and craniological characters, were identical with the present Esquimaux: a conclusion now maintained by many excellent geologists who have investigated the relics of the French and Flemish bone-caverns.

On Chloroform. By CHARLES KIDD, M.D., &c. London: Renshaw. 1868.

Dr. Kidd is well known as an amusing and somewhat enthusiastic advocate of chloroform, and in the book now published, (an enlargement of a former treatise,) he has placed together all the conceivable arguments in support of the use of this anæsthetic. The work is divided into ten chapters, of which the following are the principal contents:—(1) The history of anæsthetics. (2) Ether, the earliest of modern anæsthetics. (3) Value of etherisation in lessening shock. (4) On some analogous hydro-carbons. (5) The discovery of chloroform. (6) The four stages of chloroform anæsthesia, and the operations adapted to each. (7) The contra-indications to the use of chloroform. (8) Local anæsthetics, and their benefit. (9) Use of anæsthetics in child-birth. (10) Fatal results of anæsthetics. We must do Dr. Kidd the justice to say that he certainly proves his case. We would indeed add that he over-proves it, and by the excessive zeal which he displays, and the tendency to special pleading which he evinces, may cause those who are themselves ignorant of the fact to look on his opinions with considerable suspicion. There is, too, a violence of style and a somewhat confusing mode of expression throughout the pages of the work, which are not creditable to the author. The condemnation of Richardson's method of local anæsthesia by the cold of ether spray is, as regards temperate climates, absolutely without foundation.

Vaccination impartially reviewed. By F. E. JENCKEN, M.D. London: Churchill. 1868.

The title of this brochure is one fairly and honestly given, since the author reviews, in a most straightforward and unprejudiced fashion, the arguments in favor of, and opposed to, vaccination. The question resolves itself into two, *viz.*, *first*, the actual value of vaccination as a prevention of small-pox, and the period through which the operation retains its beneficial influence; and *second*, the dangers of vaccination from the possible introduction of other matters into the organism. So far as we can see, the evidence adduced and discussed by Dr. Jencken leads to the conclusion that vaccination is unquestionably a prevention. In regard to the period, he contends that, in average cases, the efficacy of the vaccine matter extends over from seven to twenty-one years; but where the operation has been performed on both arms, and has produced four or five pustules, it may be regarded as a safeguard for life. Concerning

additional and valuable matter. Then again there are tables

long tabular lists are given of the relative values of the different European thermometers and hydrometers. The drugs are arranged in alphabetical order, infinitely the most convenient

preparations. Let us take chloroform as an illustration. Under this head we find the following information in this order:—Latin name, English name, formulæ under old and new notation,

bles, medical properties, (fully given, and according to most recent authorities, dose antidotes, official preparations, their uses and doses. Unofficial preparations and doses, as Liquor Chlor. Camphor, Liquor Chlor. Compos, Unguent Chloroform, Vapor

dispense with its assistance in our consulting-room. It is com-

English Correspondence.

[illegible] St.

[illegible] May 18th, 1868.

[illegible] May [illegible]

[illegible] I [illegible]

emple facts of this case before you in my last communication,

unfairly used by the Governors of the British Lying-in Hospital, determined to have the matter enquired into, and consequently

[illegible] document was signed by such names as George Critchett, Robert Greenhaugh, George Harley, J. Hall Davis, Henry [illegible] V. J. Zachariah Lawrence. In accordance with this demand, a

[illegible] written statement of his case, and Dr. Edmunds proceeded to reply to it in most discourteous and unparliamentary language.

climax, however, when Dr. Edmunds so far lost control over his temper as to call one of the members a "coward." The uproar

"retract," utterly preventing any speaker being heard. However, after some exertion on the part of the Chairman, order was

was compelled to retract his remark unconditionally, and he certainly "ate the leek" in anything but a pleasant manner. It was evident to the calmer members that there was too much,

grievance to make, to a Committee. The following gentlemen form

Dr. Waller Lewis, and Dr. Hicher. A good deal of conjecture

tion.

commission of enquiry into the Farnham Workhouse. These particulars were revolting enough, and were sufficiently so to induce the Poor Law Board to send down a couple of its

place, and the report of these Inspectors to the Board has just

nothing less than a most barefaced attempt to whitewash the guardians, who, as every one here knows full well, deserve the highest censure. Indeed there is also a little inconsistency in the Report, for while, in the first part, it seeks to screen the

in the second portion it points out to them the necessity for a

bed to clean this cess-pool, and tumbled in, and was drowned in the filthy liquid. What I most deplore is the fact that both guardians and the Poor Law Board make a scape-goat of the medical officer, Dr. Powell. In dealing with this official, who has perhaps shown a little too much zeal and independence

pull, baker," and between the two forces the medical officer suffers sadly.

The Coronership for Western Middlesex can hardly be

elected, and is discharging the duties, Dr. W. Hardwicke, who was defeated by a majority of only twenty-one, declares that his opponent employed unjust means, and that he obtained his supremacy of numbers by corruption, bribery, and by bringing to the poll a number of persons unqualified as electors. He evidently means to take the usual legal proceedings, and his friends are supporting him by holding public meetings, and

an application for some terrible legal engine known as a

feel immensely uncomfortable.

[illegible] become an influential Educational Reform Club, has dwindled into utter insignificance. It now contents itself with legislating for the schools, by prescribing the number of hours that the students shall attend lectures, how certificates shall be signed,

upon such subjects as the "moral guidance of the student," and the necessity for treating him as though he were a little schoolboy, and the result has been that the really thoughtful members, who desired to see the whole of the present system of education altered in plan, and to substitute absolute knowledge for mere red-tape and formality, have left the society in disgust. The last meeting was badly attended, and the propositions carried were of the most trivial and unimportant character.

[illegible] subject was the subcutaneous treatment of wounds, and the germ theory of suppuration. Mr. Adams holds that the great

air. He entirely disclaims any faith in M. Pasteur's theory of the connection between the unhealthy character of wounds and the existence of low vegetable organism, (bacterium) etc., in the liquids of the wound. Admitting that these organisms may be

Richardson, who spoke upon the paper, held the same opinion. He considered that Pasteur's hypothesis only gained ground

whatever to parasit. Take, for instance, the case of [illegible] of the liver. What do the germs come from to produce [illegible] How do they get into the animal body to [illegible] [illegible] and they are carried by [illegible] [illegible] [illegible]

The Arsenic Bath.—

The Action of the Carbonates

The Micro-Spectroscope in Pathology.—Dr. W. [illegible]

the paper is that which refers to the spectrum of blood in its

Mr. H. C. Sorby. It is remarkable, too, that Mr. Herapath never once alludes to the interesting researches of Dr. Thudicum in the characters of the blood in cholera which have been

Council.

The Methyl Compound of Morphia Strychnia.—Some of

compound was administered to animals to test its effects. It was found that, whilst a dose of even the 24th of a grain of strychnia produced convulsions and death in a rabbit, that as many as twenty grains of methyl strychnia were required to

distinct from those which resulted when pure strychnia was administered. In fact, the union of methyl with strychnia diminishes its poisonous action 140 times. The combination of methyl with morphia was found to diminish the poisonous

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Vaccine Solutions.—At the meeting of the French Academy

M. Chauveau, in which the author shows, *first*, that the vaccine

that this may be extensively diluted with water without diminishing its powers. He has found that this dilution with water may extend to fifteen times the weight of the vaccine matter. When the dilution is carried further, it may sometimes happen

If the dilution is carried to 400 times the weight of the virus, the solution is utterly inefficient, if applied in the ordinary way

sent in a note to the Academy in which he claims the merit of first pointing out this property of vaccine in a sealed memoir

Foundation, has proved the same thing with regard to the spermatozoa, viz., that the semen may be considerably diluted with-

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A new

M.

Edible Vegetables.—

Preservation of Timber.—M. Stenhouse Martin has suggested that the vapour of sulphuric ether may

action of ether, was found at the end of several months in a perfectly fresh condition. It does not appear, however, that the dietetic qualities of the meat are improved by the process.

The Anatomical Elements.—M. Robin's memoir on the Ana-

confines the term "anatomical element" to those particles of the tissues which, no matter how small they may be, are capable, when placed under favorable conditions, of reproducing them-

the "formed material" portion of Dr. Beale's view, he at least approves of the "germinal matter" opinion. This is a return

years ago.

The constant and interrupted electric current in Paralysis.—

effects of the induction, intermittent current, and the continuous galvanic current on the muscles of the paralysed. It is well known to those who are acquainted with electro-therapeutics

induction coil has no effect. Why is this? Brücke, supporting Neumann, says it is because the muscle of the paralytic being weaker than in health, requires the current to traverse it for some little time before contraction is produced, and the induction currents not lasting long enough, fail to give rise to contraction. In proof of this he says that, if the constant current be interrupted, it likewise will produce no contraction.

The origin of urinary deposits has recently received the

The author's researches refer especially to the deposition of uric acid. With regard to the sediment of this substance, many different theories have from time to time been advanced, and among others that of Scherer, that the uric acid was precipitated by the lactic, found much favor. M. Voit, however, has shown that this explanation is unsound. He attributes the deposit of uric acid to the decomposition of the urates by the acid phosphate of soda, which thus causes the precipitation of the uric acid. He finds that the amount of uric acid deposited is in direct proportion to the quantity of the acid phosphate present.

Endosmose Diffusion and Dialysis.—One of the best general

just been laid before the French Academy. (Vide *L'Institut*, March 4th.) In this the whole subject is discussed in all its

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Sciences of Vienna, in one of its late meetings, a paper was

muscles of batrachia, especially with reference to its effects on the passage of the electric current. Under the ordinary

muscles, but continuous ones produce decided contraction. He thinks that in these cases the electric currents obey different laws

ORIGINAL COMMUNICATIONS.

ON CHOLERA.

BY C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

Definition.—A disease which is capable of being generated at all seasons of the year in certain parts of India, and occasionally over vast tracts of Asia, Europe, and America: it shows a marked predilection for those living under insalutary conditions, or whose health has been impaired from disease, or depression of the nervous forces; it is very apt to be developed among new comers to a locality in which the disease prevails. Cholera is generated indiscriminately among persons of both sexes and all ages. It is characterized by nausea, faintness, and a feeling of oppression in the præcordial region, griping pains in the abdomen, frequent purging, (the stools being alkaline when passed, and in appearance resembling rice-water,) constant vomiting, partial or complete suppression of urine, and profuse perspiration. The skin is inelastic, and that of the hands and feet shrivelled and dusky; the eyes are sunk, and the features pinched; cramps are felt in the limbs; there is difficulty of breathing, intense thirst, excessive restlessness, rapid and small pulse, and suppressed voice. The external temperature of the body is slightly below 90°, and a peculiar sweetish sickly odour (fishy) is exhaled from the body, breath, and dejections. If left to nature, about one-half of those attacked with cholera recover of themselves, reaction supervening, and often being accompanied with fever, and not unfrequently with suppression of urine and various other complications: or the disease may terminate, within a few hours from its commencement, in fatal collapse.

History.—The early Sanskrit writers are our most ancient authorities in the science of medicine. Of these Chararka is believed by the Hindus to have derived his knowledge from a mythological personage known as Dhawantari, coinciding in character with Esculapius. Chararka's works are incomplete; but in the Nidân of his disciple Susruta, we meet with the following description of a form of "Vishuka." The patient is attacked with "vomiting, purging, faintness, thirst, pain in the abdomen, yawning, forgetfulness, burning heat in the stomach, duskiness of the surface of the body, pain in the head and heart." The worst symptoms are "blueness of the gums, lips, and nails, diminution of the senses, coldness of the body, sunken eyes, suppressed voice, a feeling of complete lassitude," but "if burning of the palms of the hands and body, accompanied with sharp vomiting," occur, the patient is likely to recover; and should "he digest his food, all danger is passed," the patient obtaining immediate relief, the purging stops, and he is in comfort." If this description refers to cholera, the disease must have been in existence for many centuries, Susruta being mentioned in the Mahabarata, which was compiled before the Christian era.

These Hindu authorities lived and wrote in the North-Western Provinces of India, and it is remarkable that they describe Vishuka as being a sporadic disease,—a character it has retained up to the present time in the North-West, with the exception of waves of the disease which seem to pass over the country from time to time.

Hippocrates,* Galen, and Whang-shoohot are witnesses to the existence of cholera in their day, both in Europe and China, and they have been succeeded by a series of Grecian, Roman, and Arabian authors, bearing record to the fact of the presence of cholera in the various countries in which they lived up to the present time.*

The literature of the middle ages is singularly barren in original observations regarding the science of medicine. Men occupied themselves rather with the ancient terms of art than with actual observation, and, in their critical researches, overlooked the important events that were passing before their eyes;† and this is precisely what is now going on among Hindus and Muhammadans in India. The Bands and Hakeems pore over their ancient works with the greatest avidity, but are utterly blind to the necessity of noticing what is passing around them. Consequently, we have but few records in Persian or any other Oriental language to enlighten us as to the history of the diseases of India.‡ Otherwise there can be little doubt that we should have evidence of waves of epidemic cholera passing over the length and breadth of the country long prior to our occupying it.

The earliest record of the existence of cholera in Hindustan, from the pen of a European, occurs in the "Lendas da India" by Gaspar Correa. He says that, during the spring of the year 1503, 20,000 men had died in the army of Zamoryn, the enemy of the King of Cochin, and that the cause of this mortality was enhanced "by the current spring diseases, and also small-pox, *besides which there was another disease, sudden-like, which struck pain in the belly, so that it never did not last out eight hours' time.*"

The same author informs us that in the spring of 1543 he met with cholera in an epidemic form at Goa that the natives called it *moradexy*, and that the mortality was so great that it was with difficulty the dead could be buried; "so grievous was the throe, and of so bad a sort, that the very worst portion seemed there (in the stomach) to take effect, as proved by vomiting, with draughts of water accompanying it, as if the stomach were parched up, and cramps that fixed the sinews of the joints and of the flat of the foot with pain so extreme, that the sufferer seemed at point of death; the eyes dimmed to sense, and the nails of the hands and feet black and arched."

In 1563, Dr. G. D'Orta,§ another Portuguese, gives us a vivid description of cholera as he met with it at Goa. He says the Arabs called it *hackaiza* (*haiza*), the name it is known by throughout India to this day. He adds that the disease is always most severe in "June and July."

Linschot, a Dutchman, who resided at Goa for some few years prior to 1589, remarks that "the diseases which these changes of the season bring to the inhabitants of Goa are several, among which that commonly known as *mordexin* occurs, which comes on very suddenly to those subject to it, with swelling of the stomach and continual vomiting, till they fall into a faint. This disease is common, and proves deadly to many."‖

There seems, therefore, no reason to doubt that epidemic cholera existed in Goa, the only province in India known to Europeans during the sixteenth century, and that its phenomena, and the time of its principal visitations, were precisely similar to the disease as seen there at the present day.

In the seventeenth century we have evidence of the presence of epidemic cholera in Batavia¶ (1629), in the province of

* Hippocrates Coi, de morb, vul. lib. v, Sec. VII, fol. 1144, Ed. fol. Francofurti, A. D., 1624.

† Transactions of the Medical and Physical Society, Calcutta, Vol. I. p., 204.

* Celsus A. C. Celsi Medicina, lib IV, Chap. XI.
De Cholera, Chap. 16, Alexandri Tralliani.
Aretæus, lib II, Chap V, Cœlius Aurelianus, lib. III, Chap XX
Avicenna, p. 492, Edit. Rome, 1593.

† Hucker on the Epidemics of the Middle Ages. Translated by Dr. Babington. London, 1846.

‡ Contribution to Literature of Cholera. By G. Gaskoin, Medico-Chirurg. Review, 1867, p. 217.

§ Medico-Chirurg. Review, 1867, p. 217. Gaskoin on the Literature of Cholera,

‖ Quarterly Review, 1867, p. 92.

¶ An account of the diseases of the East Indies, by T. Bontius. Translated and published in London, p. 26.

[illegible]* and in India among the natives of 1668,† in 1670 at Goa, and [illegible] Surat, where [illegible] was [illegible] with [illegible] prior to 1678.

In 1762 it [illegible] Lieut.-Colonel Hay, Chief Engineer, [illegible] Isle de France, thirty [illegible]:

[illegible] account we have of the occurrence of cholera [illegible] English [illegible] Paisley, [illegible] and Madras Infirmary, 1774, and [illegible] Curtis's Works.‡ Dr. [illegible] published in Edinburgh in 1787. It [illegible] that [illegible] twenty-four years after it was written, particularly as, in the meantime, Dr. [illegible] had [illegible] a work in London, in 1785, on the "Spasmodic Affections of India," in which he gives an accurate description of cholera. It is evident, therefore, that, in spite of Dr. Paisley's letter, neither Girdlestone nor "a general meeting of the Faculty at Madras" which he consulted in 1782, [illegible].

I am anxious to bring this point somewhat prominently forward, not as a proof of ignorance or neglect on the part of the authorities whom I shall quote, for they had a perfect right to follow Cullen's nosology, and class cholera under the heading of spasmodic diseases if they pleased; but, supposing this were the [illegible] we [illegible] to meet with a description of the disease as cholera among the writings of English [illegible] between the latter part of the eighteenth and the beginning of the nineteenth centuries.

In 1774, Dr. Paisley, of Madras, writes§ —"I am happy to hear you have occasioned the army to change its ground, for there can be no doubt, from the circumstances you have mentioned, that their situation contributed to the frequency and violence of the attack of this dangerous disease, which, as you have observed, is true cholera morbus, the same they had at Trincomale." (In a foot note Dr. Curtis remarks that this must refer to some occasion long anterior to the war of 1782.) Dr. Paisley goes on to observe that it is often epidemic among the blacks. "In the first campaign made in this country, the same disease was terribly fatal among them, and fifty Europeans of the line were seized with it. I have met with many single cases since." In 1770 cholera was endemic among the natives in the Arcot Valley in Arcot, and throughout the Travancore [illegible].

In 1781 we find cholera prevalent during the month of March in the district of Ganjam. It attacked a division of some 5,000 Bengal troops marching through that province under Colonel Pearse. He reports that, besides those who died, no less than five hundred men were admitted into hospital on the 22nd of March. He adds:—"Death raged in the camp with horror not to be described, and all expected to be devoured by the pestilence. In vain I studied to discover the cause of our misfortune. I attributed it to a poison, but at length found that *there had been a [illegible] on the [illegible] where our first marches lay*, and that part of our camp was already drinking the [illegible]." In the course of a few days 1,143 men were in hospital affected with this disease. On the 29th of March, however, the sick were reduced to 908, and on the 1st of the following month the force was able to march, leaving 300 men convalescent behind. It will be observed that Colonel Pearse does not mention the disease as being cholera; he [illegible] and in the following quotation from a despatch of the Supreme Government to the Court of Directors, no mention is made of cholera. This document is dated 27th April, 1781, the occurrence of the disease is notified, and the destruction which it caused in this detachment mentioned in terms of becoming regret.* After adverting to its progress [illegible] —"The [illegible] to which we allude has not been confined to the country of Ganjam; it afterwards found its way to this place (Calcutta); and after chiefly affecting the native inhabitants, so as to occasion a great mortality during the period of a fortnight, it is now generally abated, and pursuing its course to the northward." The progress of this epidemic has never been recorded; but we have, at any rate, evidence of epidemic cholera raging throughout the district of Ganjam in March and April, 1781, of its travelling northward to Calcutta, attacking the inhabitants of that city and the intervening country, and passing on in the same northerly direction. Here, unfortunately, a blank occurs in the history of its progress; but we find that in April, 1783, cholera burst out at Hurdwar, and in less than eight days is supposed to have cut off twenty thousand victims.

This is precisely the course, and about the same time which subsequent waves of cholera have taken when passing over India; and it seems to me that this fragmentary history is presumptive evidence that the epidemic was of a similar nature to that which occurred in 1817, and on subsequent occasions. This position is strengthened by the fact that Dr. Girdlestone says:†—"Spasms was the first disease which appeared among the troops who arrived at Madras in October, 1782. More than fifty of these fresh men were killed by them within the first three days after they landed in that country, and in less than a month's time upwards of a thousand had suffered from attacks of these complaints." He goes on to describe the disease:—"Coldness of the surface of the body, especially of the hands, feebleness of the pulse, spasmodic contraction of the lower extremities, the hands and feet become sodden with cold sweats, nails livid, pulse more feeble, breath cold, thirst insatiable, vomiting incessant, which last, if not checked, soon terminates the existence of the patient." This is evidently an account of the disease we recognise as epidemic cholera. Fra Paolino da S. Bartolomeo, in a work published at Rome in 1796, gives a curious account of cholera.‡ He says:—"The disease is called *mirtirissa*, or *nircomben*, in the language of Malabar, *viszucega* in Sanscrit, vulgarly *mordexein*, and not *morte de chien* as described by Sonnerat. It is an intestinal colic caused by the cold wind from the Ghattes, or from bathing in the cold mornings. This disease is frequent in Malabar in October, November, and December, when the wind comes from the Ghattes loaded with particles of nitre; it is as common on the Coromandel Coast in April and May, and often carries off thirty or forty persons in a village during one night; for, unless instantly relieved, it destroys [illegible] in the course of a few hours. *In 1782 the disease broke out with terrible fierceness, and destroyed an enormous number of people!* In the month of May, 1782, cholera was raging in an epidemic form at Trincomale, and our fleet at anchor there was severely affected."§ M. Sonnerat,‖ in his Travels in India, also mentions the existence of epidemic cholera along the Coromandel Coast from 1772 to 1781; so that we have independent evidence of the existence of this disease in an epidemic form in Bengal during March, 1781, in Madras, and, in fact, along the whole of the Eastern Coast of India in 1782, and at Hurdwar in the Punjab during the year 1783.

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* [illegible]

† [illegible] 2nd Edition, p. 140.

‡ [illegible]

§ [illegible] by C. Curtis, formerly Surgeon [illegible]

‖ [illegible]

* Report on the Epidemic Cholera Morbus as it visited the Territories subject to the Presidency of Bengal, by James Jameson, Calcutta, [illegible].

† Essays on the Hepatitis and Spasmodic Affections in India, by J. Girdlestone, M.D. London, 1787.

‡ Viaggio [illegible] Indie Orientali, [illegible].

§ [illegible] Cholera, p. [illegible].

‖ Second Madras Despatch, p. [illegible].

I conceive this, therefore, to be a history, though far from a detailed one, of the first wave of epidemic cholera which passed over India since the English occupied the country; and it seems that the reason for our not possessing clearer indications of the circumstances of the disease arises from the fact that it was hardly recognised as cholera. Moreover, it was not till 1786 that the Hospital Board was established in Bengal and Madras, before which period no returns of the sick were made. Mr. Scott adds, that the reports from that date up to 1802 were kept in no regular order. Our possessions in India also, prior to 1781, were surrounded by vast arrears of unsubjected country, beyond which the course of the epidemic could not possibly be traced; but the details above given are, nevertheless, important, as indicating the fact that, within twenty-four years of the battle of Plassey, we have evidence of a wave of epidemic cholera passing over a considerable portion of India.

During the month of October, 1787, epidemic cholera committed terrible ravages at Arcot and Vellore. With regard to this outbreak, Mr. Davis, a member of the Madras Hospital Board, remarks: —"I found in what was called the Epidemic Hospital, three different diseases, *viz.*, patients labouring under cholera morbus, an inflammatory fever, with universal cramps, and a spasmodic affection of the nervous system, distinct from cholera morbus. I understood, from the Regimental Surgeon, that the last disease had proved fatal to all who had been attacked with it, and that he had already lost twenty-seven men of the regiment in a few days. Five patients were then shown to me with scarce any circulation whatever to be discovered; with their eyes sunk within the orbit; jaws set, bodies cold, and extremities livid." They were being treated with castor-oil.*

During the year 1790 cholera was very prevalent again in Ganjam; in 1794 at Vellore, where it was described as the "Causis."

From the returns kept in the Office of the Bengal Medical Board during the early part of the present century, and which relate exclusively to the European troops, I find that in 1808 five cases of cholera are reported,—one at Meerut, one at Delhi, another at Muttra, and two in Calcutta. In 1809 three cases occurred, and in 1811, 1812, 1813 no less than seventy-nine cases of cholera are reported as having taken place at Chunar, but not a single one from any other station in the Presidency. During the year 1814 instances of cholera occurred at Cawnpoor, Nagpoor, Benares, Meerut, Dinapoor, and the Presidency; in all forty-six cases, and eleven deaths. These are the first deaths reported from this disease among our European troops in Bengal. In 1815 and 1816 there were no cases of cholera; and in this Presidency only two cases occurred among the troops at Benares in 1817, although the disease was raging throughout the whole of Bengal, showing that statistics, drawn simply from the reports of our European troops, are hardly to be relied upon as a criterion of the existence of cholera in India.

It appeared in a crowded barrack in Fort William, in 1814, among recruits just arrived from England,† and in an epidemic form at Jaulnah during the same year. With regard to this outbreak, Dr. Cruickshanks subsequently explained (in 1831) that "I entered these cases in the Hospital Returns as bowel complaint in 1814, because the matter ejected by vomiting and stool was of an aqueous or mucilaginous consistency, containing no bile." Mr. Scott observes with regard to this report:—"This paper of Mr. Cruickshanks is of great importance, inasmuch as it evinces that cholera did exist to an extent not hitherto suspected to have occurred at so recent a date, and also that, even under these circumstances, no trace of it is found in the public records; for, unless we had been guided by the incidental remark of Dr. Duncan, made five years after the occurrence, and had most fortunately been able to refer to Dr. Cruickshanks, the medical returns of the corps never could have led to the knowledge of it. Hence, as already observed, though cholera very rarely appears in the sick returns of former times, it is by no means to be thence inferred that it did not then exist."*

We are, I think, therefore justified in arriving at the conclusion that it was nothing new for cholera to spread over India in an epidemic form prior to 1817 and 1819. The nature of the disease was then fully recognised, and the country subjected to our rule, so that British Officers were for the first time in a position to report upon the cholera as it affected the natives of the country.†

(*To be continued.*)

* Scott's Report, p. xii.

† A Concise Narrative of Parts connected with the Disease which ocurred in the District of Jessore, by R. Tytler: Calcutta, September, 1817. Printed by C. M. Pratt and Co.

* Scott's Report, p. xi.

† Prior to 1760 the Company's territories in India were confined to an area containing some 15,000 square miles. In 1765 the Company acquired command over Bengal, but not till 1775 over the zamindarree Benares. From 1792 to 1799 the Nizam's territory, the Carnatic, Gorakpoor, and Bareilly came under their rule; in 1801 Bundelkhund in 1803 Kuttack and Balasore; the Doab, Delhi, and Ahmednuggur in 1803: Gujrat in 1806, and Rumdon, Sagur, Huttrah, and Darwar in 1817.

EXPERIMENTS ON THE ACTION OF THE COBRA POISON.

BY J. FAYRER, M.D., F.R.C.S.E.,

Surgeon, Bengal Army; Professor of Surgery in the Medical College of Bengal.

Third series.

EXPERIMENT No. 1.

12-45 *p. m.*—A fish, (ophiocephalus marulius,) about fourteen inches long, was bitten once near the tail by a large fat cobra at 12-50, and was put into water immediately.—1 p. m. Fish seems sluggish.—1-5 p. m. Jumped out of the jar of water.—1-8. Fish active; plunging about in the jar.—1-14. Plunging; broke the glass jar. Put into another vessel.—1-16. Seems sluggish; can be taken up by the tail.—1-22. Turning on his side; plunging; jumps out of the jar.—1-25. Exhibits convulsive movements; lying on its side. 1-30.—Nearly dead.—1-40. Dead. Another fish of the same size, not bitten, but kept for the same period in a similar jar, is alive.

EXPERIMENT No. 2.

22nd April.—A dog was bitten by a full-grown bungurus fasciatus at 1-13 in two places on the inner side of the left thigh.—1-16. No paralysis of leg such as is seen in cobra bite. Dog seems uneasy.—1-28. Dog seems unaffected.—1-36. Dog lying down; seems sluggish; nothing very striking in his appearance; breathing perhaps rather hurried.—1-55. Sluggish; struggles and drags the leg a little.—1-56. Vomiting a quantity of bilious fluid. Snorting; restless.—1-58. Seems very restless; lies down; is evidently nauseated, and tries to vomit.

2 *p. m.*—Respiration hurried and irregular, 112 in the minute.—2-15 p. m. Sluggish and nauseated; breathing quick.—2-30. Sluggish, but can be roused; makes efforts to vomit; breathing slightly oppressed.—4 p. m. Same state. Dog died on the afternoon of the 25th.

EXPERIMENT No. 3.

A young mungoose (herpestes malacconsis) was bitten two or three times by a full-grown cobra, at 1-24 p. m. on the 30th April, on the inside of the thigh, from which the hair was first removed. Blood was drawn by the bites.—1-27. Lies stretched out, and rigid from convulsion.—1-29. General

[illegible] and tendency of muscles.—1-30. Dead.—1-50. Body [illegible]

EXPERIMENT No. 4.

April.—A young [illegible] was bitten freely [illegible] 1 p. m.—1-45. Quite [illegible] 2-15 p. m. Snake [illegible] 2-50. Perfectly well.—4 p. m. Seems well.

April.—Apparently well.

EXPERIMENT No. 5.

A large [illegible] was bitten [illegible] on the body, and [illegible] by same cobra, of a light [illegible] 12.57 p. m.—1-10 p. m. Snake [illegible] 1-15. No change.—2-40. Snake [illegible] 2-50. Snake [illegible]. The next day at noon he was perfectly well.

EXPERIMENT No. 6.

30th April.—A cat was bitten by the same cobra that bit the [illegible] 1-27 p. m.—2-30. Cat [illegible] paralysed.—1-35. [illegible] breathing heavily.—1-40. Cat lying down, seems [illegible] convulsive twitchings and laboured breathing.—1-55. Active when roused.

2-30. Appears rather distressed; has bitten its tongue, and [illegible] now fully under the influence of the poison. Lies on one side; when placed on its feet, drops with its belly on the ground, and then falls over on one side; constant twitchings of the limbs, and frequent violent efforts made to rise, but quite in vain. Heart's action feeble, 108.—3 p. m. Dead. The blood, examined twenty minutes after death, showed no perceptible [illegible].

EXPERIMENT No 7.

A dog was bitten by a Bungarus fasciatus, about six feet long, on the [illegible] side of the left thigh, at 1-27 p. m.—1-29. Dog restless: licking the wound; respiration hurried, probably from excitement.—1-35. No apparent change; no paralysis as in case of cobra bite.—1-50. Seems rather weak in the hind leg, but otherwise quite well and playful.—2-50. Dog seems well; lying down. The next day at noon the dog was quite well, and ate his food. He died a day or two later.

EXPERIMENT No. 8.

30th April.—A cat was bitten by a half-grown Bungarus fasciatus in the thigh, from which the hair had been previously removed at 1-48 p. m.—2-50. This cat from the first was sluggish, and apparently unwell, keeping its mouth open, and its tongue protruded. It had an abscess in one cheek. Within the last hour there has been little change; the animal is perhaps rather more sluggish. The noose round the neck being [illegible] was [illegible] slackened, and at 5-10 p. m. the cat was found to have escaped.

May 1st. The cat found dead.

EXPERIMENT No. 9.

A mungoose was bitten in the inner side of the thigh by a large cobra at 1-41 p. m., and was put into a cage immediately at 1-48, apparently not affected. No paralysis of leg; very active in cage; trying to get out.—2 p. m. Mungoose eating vigorously some raw meat, seems quite unaffected. Was quite well next day.

EXPERIMENT No. 10.

2nd April.—A cobra was bitten by a large Bungarus fasciatus at 2-12 p. m. at a place where some of its scales had been first scraped off.—2-30. Seems quite well.—4 p. m. Seems well.—[illegible]

EXPERIMENT No. 11.

A full-sized cobra bit another full-sized cobra in the mouth. They were made to come their heads respectively in each other's [illegible] at 1-37 p. m.—1-42. Cobras were then put into a wire cage. They were [illegible] at 1-42. Both snakes very [illegible] to the cage.—2-50. Both snakes unaffected, [illegible] of biting at each other. The next day at noon they were quite well.

EXPERIMENT No. 12.

A mungoose and a full-sized cobra were put into a large wire [illegible] 1 p. m. The snake struck at the mungoose, and they grappled with each other frequently, and apparently the mungoose must have been bitten, as the snake held on to it about the neck or head. At 1-15 p. m. there was no effect on the mungoose; both it and the snake were much excited and angry, the snake hissing constantly.—2-05 p. m. No effect on the mungoose. The snake is somewhat exhausted, and has a bleeding wound.—1-51. They are both occasionally darting at each other, but the mungoose jumps over the snake, and tries to avoid it. Next day at noon both were well; the snake frequently struck at the mungoose, but did not appear to injure it; both seemed very savage, but the mungoose would not bite the snake; he jumped over it.

There had been two cobras in the cage with the mungoose during the night, both equally fierce, and striking each other and the mungoose; but the latter was uninjured. He was bitten once by the cobras rather severely on the head.

EXPERIMENT No. 13.

On Wednesday, 27th May, 1868, I made the following experiments; the idea having been suggested by a letter addressed to the Editor of *Engineering*, March 20th, 1868, by Mr. W. Clarke, C.E., who, reporting his experiments on poisonous snakes in India, in 1854, mentions the extraordinary effect that creosote had in destroying them, and suggesting its use, or that of analogous chemical compounds, in the treatment of snake-bites. The effect of an analogous chemical compound, carbolic acid, on the snake itself I have as yet only ascertained. The therapeutic value remains to be determined, though, in anticipation, I express my doubt as to its being more beneficial than anything else, unless applied early enough to decompose the poison before absorption into the nervous circulation; and this we could seldom hope to effect. I am quite satisfied that the application of carbolic acid, or perhaps even of coal tar, to the walls and timbers, and apertures by which their entry into a house could be effected, would have a most beneficial effect in keeping snakes at a distance.

At 12-33 noon I put a few drops of carbolic acid into the mouth of a large and very vigorous cobra, and it seemed to produce almost immediate effect. The snake struggled violently, opened and closed the mouth, went rapidly into a state of convulsion, as evinced by a series of spasmodic peristaltic waves of the whole length of the body. In less than five minutes it was evidently powerless for evil, and unable to strike or even move from the spot, but was frequently convulsed. The convulsed movements continued getting fainter, and did not entirely cease for twenty minutes, when it was quite dead. This cobra was over four feet six inches in length, and peculiarly active and vicious.

EXPERIMENT No. 14.

I poured a few drops of carbolic acid on to the floor of a large wooden cage, with a wire front, in which there was a large bungarus fasciatus. The snake was not handled, and the carbolic acid could scarcely have got into the mouth, though it touched the head. The bungarus immediately withdrew his head from the spot where the acid fell, and became very much excited and convulsed, the tail being for a time quite rigid. It turned over on its back in about three minutes, and lay almost motionless for about five or six minutes more, during which slight convulsive movements occurred, as in the cobra, and in less than ten minutes it was quite dead. This snake was five

feet long, and very powerful, sluggish as the bungarus always is, I believe, in the day time; but very active when roused.

Life in this snake was much more rapidly extinguished, and by a smaller dose of the poison, than in the smaller cobra. As they lay stretched out side by side, convulsive twitchings were apparent in the cobra for some minutes after the bungarus was quite dead. This would indicate that the bungarus is much more susceptible than the cobra, for it was apparently destroyed by the vapour, or, at all events, by the very small quantity that might have trickled down from the head into the mouth. After death, the mucous membrane of the mouth was natural; whereas in the cobra that had drops placed in the mouth, these had completely whitened the mucous membrane, and congulated the poison which had exuded from the fangs.

I hope to test the merits of carbolic acid and other analogous chemical compounds as therapeutic agents in snake-bite on some future occasion. In the meantime, its use, as a preventive against the entry of snakes into houses and other places where they may prove dangerous, or as a means of getting rid of them where they have taken possession, is suggested, for there can be no doubt that the drug is most deadly and disagreeable to the reptiles.

ON SNAKE-POISON.

BY CHARLES R. FRANCIS, M.B.

DURING the past few weeks the subject of snake-poison has not been allowed to slumber. It has been taken up warmly by the Profession and by the Press, and it may fairly be expected that useful results will follow. Dr. Mohendro Loll Sircar has commenced a series of interesting experiments with a view to testing the truth of Dr. Halford's statements. These he has been unable to confirm,* and additional negative evidence is therefore furnished in favor of the pathology of cobra poisoning consisting in *nervous*† *shock*. In Dr. Sircar's experiments, three fowls, a dog, a cat, a jackal, a fish, a young cobra, and a long slender snake, (coluber lineatus?) known locally as *kanore*,‡ were bitten by cobras. All died in the usual way, and even the young cobra felt the influence of the poison. It became lethargic, and the snake-charmer thought it would die; but in the course of half an hour it roused itself, and became as vigorous as ever.

It will be remembered by the readers of the *British Medical Journal*§ that, subsequently to his former experiments, Dr. Halford caused a cat, big with young, to be bitten by a cobra. The cat died, and the kittens in the uterus (there were four) were found dead on opening that organ. On examining the blood of the cat and of the kittens, the same appearances were found in each, viz., an abundance of the "foreign cells." That the kittens were poisoned through the blood of the cat is perfectly clear, and the question arises, (setting aside for the present any enquiry as to the cause of the discrepancy, in the results of their investigation of the blood, between the observers in Calcutta and in Melbourne), can the young of any animal which has been bitten by a cobra be poisoned by *its milk* when swallowed and taken into the stomach? Physiology answers, no. That the poison, *once in the mother's blood*, will be reproduced in the secretions, we can readily understand; and, if milk so impregnated were applied to an abraded surface on the young, symptoms of poisoning would doubtless follow; but would they follow if that milk were presented to the stomach? It is well known that, as a rule, a poison which, if introduced into a *wound*, will rapidly produce a fatal result, may be *swallowed* with a perfect impunity. I am not aware of any exception to this rule.

Professor Christison mentions, in his book on Poisons, that "a pupil of Professor Mangili swallowed at once the whole poison of four vipers without suffering any inconvenience, and that of six vipers was given to a blackbird, that of ten to a pigeon, and that of sixteen to a raven, with no other effect beyond slight and transient stupor." Such facts as these settle the point at once. The question then arises, can a poison, which, when presented to the stomach in all its original virility and entirety, is not absorbed by that organ, but which passes through the intestinal canal without doing any mischief, be taken up into the system when introduced into the stomach after having been secreted from the blood into the milk? Before answering this question, we must know in what shape the poison exists under the two circumstances. Is it the same in the milk as it is when swallowed into the stomach? or has the essence of the poison, as it were, been secreted in the former; and is the active principle thus brought into contact with the absorbents taken up by them when the original poison would be rejected? The readiness with which milk becomes impregnated with active principles is well known. Drugs given to the mother find their way through the milk of the former into the stomach of the child, and operate occasionally more energetically upon the one than upon the other. Some kinds of food, which have little or no effect upon the parent, act like poison upon the infant. To quote once more from Professor Christison. He tells us that at Aurillac, in France, the milk of certain cows caused violent vomiting, with other symptoms of cholera, in consequence, it was believed, of the cows having fed upon a particular herbage—the *euphorbia exigua*, a species of *spurge*; that Professors Orfila and Marc were appointed by the Society of Medicine of Paris to report upon the accident; that they did not consider that any of the received explanations were at all satisfactory; *and that they were disposed to ascribe the poisonous alteration of the milk to new principles formed by a vital process.** Now what are we to understand by this last statement? It is not, I imagine, presumed that the poisonous alteration took place independently of any poisonous constituent in the blood. May it not have been that what was comparatively innocuous in the food, or even in the blood, became intensely deleterious in the milk? This, I am aware, is very like begging the question; and it may be urged "why go so far to an explanation when we see, and especially in India, how readily milk is vitiated in stormy weather in the rainy season, when the air is charged with electricity; and this quite irrespective of poisonous food?" True; but in this latter case the milk so vitiated has first left the animal. It is *drawn milk*, milk left to stand, which becomes changed, not the milk as it

* Dr. S. Weir Mitchell likewise failed to discover anything of the kind in the blood of those poisoned by rattle-snakes.—*Medical Times and Gazette*, 29th February, 1868.

† This view is quite sufficient to account for all the symptoms which result from the introduction of the poison of serpents into the blood—the low and collapsed condition; the languid circulation of the attenuated blood, with the altered character of its elements; the dilatation of the pupils; the failure of the breath; and the general lethargy, followed by complete insensibility.

‡ This is not a poisonous snake. It is known also, in Bengal, as *Dhaman cobra*. The term *dhaman* has been suggested by Dr Sircar, because of the resemblance of the snake to the one described under that name by Russell, page 1 of his work. The fact of its being swallowed by the young of the cobra is sufficient to afford further proof of the harmlessness of the poison which it possesses. This was one of the results, too, which was observed by Messrs. Twining and Bruce in 1827. In the course of their experiments, they exposed to a poisonous snake, called *Phoorsa*, the creature towards the tail by a cobra. It died in little more than two hours. These observers further proved that a poisonous snake is *apparently* unsusceptible of the poison of another species. A [illegible] in Behar [illegible] (a snake with four [illegible] on the upper [illegible] the other side, and a cobra were known to live [illegible] with no results whatever.

§ Of December 21st, 1867.

* I must here add my [illegible] in saying that [illegible] which [illegible] being eaten, was not found to [illegible] found its way into the milk. The question here is, will the active principle of [illegible] which was not poison when eaten, have [illegible] taken into the milk?

examined by Professors Orfila and Marc. I confess I am in-

terious material which was introduced into the blood through the stomach, and that the *vital principle* of the

answered before we can determine the difference between its constitution when secreted from the poison-gland, and its con-

In the course of the experiments conducted by Dr Fayrer, and

the fresh poison appeared to be a viscid homogenous fluid, displaying no distinctive characters when examined either by the naked eye or the microscope. Dr. Buckland examined fresh poison under the microscope, and was so startled by the magnificent appearance, marvellously gorgeous and resplendent, that he rushed into the mess-room to call his brother officers to come and see; but, when they arrived, the entire surface was

being left. Dr. Mohendro Loll Sircar, on the other hand, tells us

he found fresh snake-poison to consist of a fluid which he calls

that, because these cells were not found in the blood of animals

The question is at present involved in some obscurity, and it will be desirable to make further observations upon the constitution of snake-poison when fresh in the blood, and in

poison will pass from the mother to the young has been proved by Dr. Halford's experiment upon the cat, whose kittens were afterwards found dead in the uterus; and now whether the young of an animal impregnated with snake-poison will die after swallowing the parent's milk, can only be proved by a like direct experiment, which I propose to make on the first opportunity; and I hope others will be induced to do the same. A *bitch* (of a dog) will probably be the most satisfactory animal to manipulate with. The fang of a genuine, well-tested, cobra should be forced into some fleshy hairless

any,—and the pups should shortly afterwards be allowed

with symptoms of snake-poisoning, the evidence will be clear

young through the medium of the milk. The experiment is worth making, as, if such a result should ensue, much light will be

I have recently been made acquainted with two apparently incredible cases, which has led to the foregoing remarks. It is stated by two very intelligent native assistants in an office, whose word I have no reason whatever to doubt, that a Hindoo mother was

[illegible] In the course of the night the child which [illegible] and [illegible] bitten by a snake, and presently, in the confusion which ensued, the mother

the influence of the poison, which was that of a cobra. A

breast to pacify, (for it had begun to cry), died also with symptoms of poisoning. A source of fallacy exists in the possibility of the infant having been bitten too; but my informant

which died after sucking milk from its mother, who had been recently bitten by a snake. Here again we have the same source of fallacy; the probability being indeed greater in this case that *both* mother and young were bitten. The explanation given by my informant is this: the snake had (as is alleged to be the custom of such snakes) entwined itself round one of the hind legs of the cow, and sucked its milk; that the mother remained unaffected, but that the calf imbibed the poison which had been left upon the udder. This is

all, *bitten* by the snake. What gives a show of probability to the [illegible]

at the mouth, which led to a suspicion of its being under the influence of snake-poison. It died shortly afterwards *convulsed*. The teller of the story adds that the cow was taken ill subsequently to the calf, and was found dead in the stall two or three hours afterwards.

I can only say in conclusion, as I said before, *best experimentum in corpore vili*....

A COURSE OF LECTURES ON THE PRINCIPLES AND PRACTICE OF MEDICINE DELIVERED AT THE MEDICAL COLLEGE OF BENGAL.

By Charles R. Francis, M.B.,

Late Professor of Medicine, &c., &c., &c.

PART OF AN INTRODUCTORY LECTURE.

(Continued from Vol. III, No. 5, page 99.)

Man's usefulness in life depends very much upon the moral training which he has had in youth, and upon the religious instruction which he then received from his relatives or friends. Many a native youth, I am rejoiced to think, goes forth into the world deeply imbued with a sense of what is right. His conduct is based upon a religious foundation. He is resolved to work for God. Consequently he at once, by the force of his own amiable character, secures a status and an influence in the society of the station where he is sent, becoming an instrument for great good, beloved by the poor, and respected by all. He takes an interest in the schools in his immediate neighbourhood, and identifies himself with the pioneers of European instruction and

very much of this value depends upon the efficiency of the Sub-Assistant Surgeon. What a proud distinction, my young friends

humble way, you are helping, by breaking up the antagonism of races, to cement the union between your countrymen and ourselves; how much better this than, by lending indolent lives, and responding in a *laissez aller* or slovenly manner to the call of duty, bringing discredit upon your whole body. It sometimes happens that Sub-Assistant Surgeons are called upon to exercise their functions in a somewhat irregular manner. For example,

quire into here, the *rank* of Sub-Assistant Surgeon is not always understood by Europeans. Many *uneducated* Europeans do not know the difference between a Sub-Assistant Surgeon and a Native Doctor; nay, in some instances, between him and a compounder. Consequently, the rank not being recognized, orders are given, it may be, to come and see a patient, when the patient should have been sent to the hospital, or, in the absence of any hospital, to the Sub-Assistant Surgeon's quarters. Now this is not the time to stand too much upon one's dignity. It *may* be an urgent case, and therefore, notwithstanding the irregularity, which it is very easy politely to point out, it is one's duty, in the cause of humanity, (in the *enthusiasm of humanity,*) to go and see the patient.

There are certain preliminary branches of instruction, with which you are expected to be familiar, before you commence your attendance on those which are final. You must know something of materia medica, chemistry, and botany, in addition to anatomy and physiology; for, without a knowledge of these several subjects, you cannot be accomplished physicians.

Materia Medica is so intimately associated with the practice of medicine, it has so direct a bearing upon the treatment of disease, that you require a more complete knowledge of it than of chemistry and botany. We live in an age when it is very much the fashion to depreciate the value of drugs. Nature, the *vis medicatrix naturæ*, is everything now. Certain drugs have their value nevertheless. Indeed, as with other gifts, it is their abuse, and not their use, which has brought the riches of the pharmacopœia into disrepute. We have gone back to the days of our wise ancestors, and ascertained that we had got into the way of giving too much medicine. But then, not content with a medium course, we must needs maintain that, to give any medicine at all was a mistake. But you will see for yourselves that it is not a mistake to prescribe a sedative where rest is required, quinine or arsenic to counteract the effect of malaria, or iodine to dispel a bronchocele. Thanks to ipecacuanha, when prescribed in appropriate doses, the mortality from dysentery is everywhere much reduced. Nowhere is this so strikingly seen as in the Army. With this drug in his hand, the Army Surgeon is prepared to meet the foe in perfect confidence as to the result. It was not so in former days, before Surgeon Docker, of Her Majesty's 6th Foot, gave to the world his new mode of prescribing ipecacuanha in drachm doses, to be *repeated according to circumstances!** It is only within the last ten years that this system has worked such wonders. Prior to the commencement of the last *decade*, the mortality from dysentery in the European Army in India was above 11· per cent. It is now below 5· You must watch the effect of medicines very closely, and satisfy yourselves that the result which you see *is* the effect of the drug prescribed. There doubtless are some disorders of the system, not amounting to actual disease, which will *rights* themselves, and for which no medicine whatever, nothing beyond a little hygienic treatment, is required. Others again absolutely require the physician's aid. They, too, would after a time terminate without the intervention of remedial measures; but they may extinguish the patient's life in the process. There are other diseases and conditions which would never be cured without medicine.

A knowledge of materia medica raises you above the level of mere artizans. You know the history and all the interesting features, whatever they may be, of the tools which you are using.

* Mr. Docker has re-introduced large doses of this drug. Ipecacuanha was prescribed in drachm doses, in Spanish America, more than 150 years ago. His *application* of the drug is novel.

Botany has never commended itself to the Native medical students of India. But, apart from its value as a means of mental cultivation, and as an elegant accomplishment, a knowledge of botany may be of great service to you when separated from your medical stores. You may be sent on duty, for instance, into the interior of the hills of India; your medicine chest may become exhausted, and you would then be glad to avail yourselves of the resources which surround you in the growing vegetation of the district. *Now*, if you are botanists, you may discover a fair substitute for quinine in the *berberis lycium* and *aristata* with which the Himalayas, at certain elevations, are covered; an efficacious astringent in the juice expressed from the bark of the *symplocos racemosa;* and a valuable anthelmintic in the powder covering the capsules of the *rottlera tinctoria*. All these and many more, to be found in different parts of the Himalayas, are valuable indigenous remedies. I have been glad to avail myself of them on more than one occasion similar to what I have instanced as not unlikely to befal any of yourselves.

With *chemistry* you will have made yourselves more or less familiar. It is probably the most fascinating pursuit which can engage the mind of man; and the danger is that medical students, who are required to know so many branches of study, may devote more than its proper share of time to chemistry. A physician, who is also a practical chemist, has undoubtedly a great advantage over one who knows the subject only theoretically. A Sub-Assistant Surgeon so qualified would be of incalculable benefit to society and the State when settled down in remote districts in medical charge of dispensaries, where he would have frequent opportunities of testing the reputed efficacy of certain bazar medicines, and of eliciting the true value of native drugs by scientific chemical processes. The time, I believe, is not far distant when the English class students at our colleges will, in addition to what they are taught already on this subject, go through a course of practical instruction for some months in the laboratories attached to our Medical Store Departments. This will give them a facility in analysis and pharmaceutical operations, which it is very desirable that Medical Officers so situated should possess. I am sorry to have to say it, but it is unhappily so, that Sub-Assistant Surgeons, when they are appointed to the charge of dispensaries, are apt to look down upon such operations as derogatory, fit only for the Native Doctor or Compounder, and to assume the *otium cum dignitate* before they have earned it. This is very wrong. In England medical practitioners have no hesitation in dispensing their own prescriptions, nor should Sub-Assistant Surgeons.* The result of their superciliousness, in this respect, is that they forfeit the respect of all right thinking people, and they do not maintain for themselves that status amongst the European portion of the community from whom we are so desirous that they should receive it. Indifference in one thing leads to *insouciance* or neglect in another, and the promising young student, from whom we expected so much when he left his *alma mater*, is spoken of as being above his work. Inspecting Officers report unfavorably of him in their *Inspection Reports*, and, in truth, the misguided youth is not fulfilling his mission. Gentlemen, take warning by what I say, and wipe out the reproach which many of your predecessors have brought upon the whole body.

In connection with other branches of study, qualifying for practical physicians, which you are required to know, is *Hygiene*. Now this is of far greater consequence than at first sight is apparent. The Professor of Hygiene has reported to me that the students pay very little attention to his lectures, and that

* This applies to emergencies.

others we can make less potent. The organic and mineral impurities of water, the septic condition of the atmosphere, imperfect ventilation, improper food, excess in alcoholic drinks, ill-constructed habitations, unsuitable dress, irregular habits of life, which, until within the last few years, have been, practically,

who can remove an ache or a pain with a "pain-killer" will require more repute, and amass more wealth, than his "learned friend" who warns the rich man of his danger, and, like the well. The physician, who studies the laws of health, and strives to remove the causes of disease, is the real friend of society. The causes of disease in this country are of a kind which, associated so

too who are so *wedded* to usage—renders it exceedingly difficult to one of yourselves, for example, like Baboo Kunayloll Dey, rises up and, bringing the light of truth into the Cimmerian darkness, wages war against these time-honored (would that they were honored in the breach) customs of native society in India, that hereafter.

It is presumed that you have become thoroughly acquainted with its handmaid—physiology; that you know the intimate structure and functions of every organ in the body when in a state of health; and that you are therefore fully prepared to enter upon the study of their diseases. A knowledge of anatomy and physiology will lead you to a knowledge of pathology and morbid anatomy. But you can never be good morbid anatomist unless you are good anatomists; nor, without an intimate acquaintance with physiology, can you hope to be correct interpreters of the pathology of disease. If you have been careful to familiarize yourself with healthy structures in the dissecting rooms, you will have no difficulty in recognizing abnormal conditions at *post-mortem* examinations. You will not at first read those aberrations of structure aright, but a frequent attendance will thereby enable you to do so. And

of a case in the wards, and, in the event of a fatal issue, follow it to the dead-house, and there see the explanation (for, in during life,—those of you, I repeat, who do this throughout the yourselves with monographs, with a view to a University Scholarphysicians in after-life. You will do well to constantly com-

explaining what could only be roughly estimated without it.

Our ignorance of the highest application of microscopic power Seneca, and Pliny, the application of the instrument to science time, from the days of Mr. Gray's water microscopes to the splendid achromatic lenses of our own era, the construction of this instrument has gradually progressed, until it has come to be, so to speak, one of the brightest crystallizations of the natural history may add rich harvests to the ever-widening fields of science; the adulterator of man's food may no longer hope to escape its scrutinizing enquiries; and even human life the lover of science, the chemist, and the medical jurist. And without it, in the present advancing state of medical knowledge, the physician's means of diagnosis cannot be said to be complete. To illustrate this with examples. A person who has hitherto enjoyed fair health, with the exception of occasional attacks of intermittent fever, is suddenly, under the influence of attacks. Death is the inquiry, in spite of every effort to prevent it, and death takes place in the cold stage. There has been no history of a fatty heart, not the slightest suspicion of its existence during life; but the experienced physician, it would be, expects to find it when he makes the *post-mortem* examination. A rough way of ascertaining the point is by pressing a piece of white paper upon a section of the organ, when, if fatty generation has taken place, spots of grease will appear. But this occurs only when there is much fat, when the degeneration is extensive. A more complete method consists in taking a small portion of one of the musculi papillares, (to which the tendinous cords of the mitral valve are attached), and teasing it carefully into minute portions with very fine needles. If fat be present, it will be seen under the microscope in the form of oil globules, which, if the degeneration be excessive, will have quite usurped the place of the transverse striæ of the ultimate muscular fibre. Such a case actually occurred under my observation during the past season, and a specimen illustrating the fatty degeneration is now in the Museum. The result of the *post-mortem* examination was most satisfactory to the friends, in whose minds there existed a great doubt as to what the cause of such a sudden death could possibly be attributed. Fatty degeneration, unless recognized, is progressive; and doubtless it was so in the case under review. In previous paroxysms of the fever, the degeneration had not probably advanced so far as to interfere with the reactionary muscular vigor of the heart; in the present paroxysm—severer, it was said by the relatives, than *any* previous ones, the result doubtless of the strong mental emotion—there was more fat than muscle, and there was not power sufficient to propel the accumulated blood forward. It stagnated, therefore, in the heart.

Take another case, one with which some of you will be admitted on the 29th September complaining of cough and severe pain all over his chest. Two months previously he had been ill in a similar way under the care of my colleague in the adjoining ward, and had left the hospital relieved, after being under treatment for five weeks. Since then he had ailed again, and had been admitted into the General Hospital. He was discharged, somewhat relieved, at the end of a fort- He then, very shortly afterwards, came to the Medical College Hospital on my admitting day, and was received into my ward. In addition to the cough and pain, I found

extreme superficial tonal rigidity over the whole surface of the body, with a pungent warmth, such as we see in cases of insolation. The percussion note in the right infra-clavicular region was dull, and there was large crepitation, almost amounting to gurgling, in this region, especially towards the sternum. Crepitation was diffused throughout the right lung. The respiration was coarse at the back of the left lung, above and below, and there was crepitation, in the left axillary region extending downwards. He was admitted, remember, on the 29th. On the 30th he complained of a burning sensation all over his body, and he was very hot. He had been very restless the whole of the previous night. The urgent symptoms subsided under the restorative plan of treatment, and on the 3rd October, when going through the wards at 11 P. M., I found him sleeping quietly on his side, the respiration being *very slightly* hurried. The following morning, when sitting up on the side of the bed to wash his face, he suddenly showed an inclination to fall. He was immediately supported into a lying posture, and stimulants were given, but without benefit. He shortly became insensible, and died within an hour. At the *post-mortem* examination, we found more or less engorgement in both lungs, the left being more engorged than the right. Diffused through the former were rounded patches of congestion. Old strong pleuritic adhesions existed on both sides, being especially marked on the right. The heart weighed ten ounces, and had a weak, flabby appearance. The walls of the ventricles were much thinned. As in the last case, a microscopical examination revealed the real cause of death, *viz.*, fatty degeneration, which was here so extensive, that the oil globules had entirely displaced the transverse striæ in the part examined. The engorgement of the lungs, from which the poor man had suffered for some time, was a progressive condition dependent upon a heart being daily deprived of its ability to propel the blood through the different organs of the body. Death was caused by asthenia (a condition of which I shall have to speak when we come to discuss the various causes of death), death beginning at the heart.

The microscope is of especial value in assisting us in one diagnosis of disease of the kidney. A few years ago, a medical friend of mine, in England, asked me to examine the urin of his brother, a clergyman, who had died comatose some months previously. The medical practitioner, who had attended the patient, had been educated before the days of Bright's discovery, and he had terrified the widow into a belief that her husband had died of some disease of the brain, which might be transmitted to the children. I took the urine, which had been carefully preserved, to Dr. Lionel Beale, in whose laboratory I was working at the time, and we examined it together. It was clear, of a dark red color, acid, and contained some large crystals of uric acid. There was no albumen, but the microscope revealed the existence of fragmentary casts from the uriniferous tubes of the kidney. The patient had died of Bright's disease, and the coma was a purely secondary condition arising from the effete products of the blood circulating through the brain, instead of being eliminated by the kidneys. You will occasionally have opportunities of seeing this condition in the cholera ward. Where [illegible] continued for two or three days uræmia is almost sure to follow.

His Highness the Maharajah of Vizianagram lately endowed the Madras Presidency at Vizianagram with the sum of Rs. 20,000, and has since offered Rs. 150 a month for the support of a Dispensary. At the request of the Committee, the Maharajah has granted a further sum of Rs. 550 to be used in providing cots and bedding for the patients.—*Madras Standard*, April 18th.

CASES FROM PRACTICE.

NOTES ON FOUR CASES OF POISONING BY CHLORODYNE, TREATED AT THE MEDICAL COLLEGE HOSPITAL, CALCUTTA, DURING 1867.

BY S. C. MACKENZIE, M.D.,

Officiating 2nd Assistant Surgeon, Presidency General Hospital.

THE following cases occurred during my tenure of office as House Surgeon to the Medical College Hospital, Calcutta. I think the publication of my notes may not prove uninteresting to the readers of the *Medical Times*, as such cases are hitherto have been of rare occurrence, and none have been reported in this country.

CASE I.

E. G., aged thirty-three, a Eurasian female, was admitted on the 4th January, 1867, at 7 A. M. During the early part of the morning she had quarrelled with her husband for having gone into the country the previous day against her wish, and, when in a fit of rage, she drank an ounce of chlorodyne which was kept in the house.

When admitted into hospital, she was perfectly comatose; her breathing was stertorous, and pupils contracted. The stomach was emptied by the stomach pump, and strong coffee and other stimulants were freely administered. As she could not be roused, galvanism was resorted to, and applied to her body, and mustard to her extremities. These remedies, however, proved of no avail. She gradually sank, and died at 2.30 P. M.

The autopsy was made by the House Surgeon nineteen hours after death. The vessels of the brain were found to be much congested, and both cavities of the heart full of dark blood of the color and consistence of black currant jelly.

CASE II.

L. C., aged nineteen, a Eurasian female, was brought by her friends to the hospital at 9 o'clock on the morning of the 5th September, 1867.

The [illegible] who accompanied her stated that, some short time before, her step-mother had found fault with her, which had [illegible] on her mind, that she resolved to commit suicide, and to effect that purpose she had swallowed the contents of a bottle of chlorodyne supposed to contain one ounce.

When admitted, she was quite sensible, but drowsy and stupid, her pupils were considerably contracted, and were not affected by light. An emetic was immediately administered, by which the stomach was emptied of a large quantity of semi-digested food impregnated with the odour of ether. Strong coffee was then given, and she was made to walk for about thirteen hours, when the narcotic symptoms passed off, and she was allowed to rest.

Two days after, namely, on the 7th September, she was discharged cured.

CASE III.

J. M., a police constable, aged fifty, but much older in appearance, and much emaciated, apparently through disease, was admitted into hospital, quite insensible, at 9. P. M., on the 11th September, 1867, with stertorous breathing, a cold clammy skin, and pupils contracted to the size of a pin's point. All endeavours to rouse him proved fruitless; he gradually sank, and died four hours after admission.

The autopsy on his body was made eighteen hours after death, when it was found that the vessels of the brain were congested, the heart full of dark blood, the whole intestinal canal much inflamed, with a few ulcers in the ileum.

From the story told by his relatives, it appears that he had been [illegible] for some time, [illegible] hospital; but losing patience, he had taken his discharge, and had returned home the day before, namely, on the 12th September. The following morning, however, he went, as advised by a friend, to a chemist's shop, and procured [illegible] of chlorodyne. He began to [illegible] doses; but finding it relieved the pain he was suffering from, he continued to take it until, by the afternoon, he had finished the ounce. He was found by his wife, late that evening, in [illegible] and brought to the Medical College.

CASE IV.

[illegible]

Of the four above-mentioned cases, it will be seen that two,

[illegible]

opinion, however, that if the patient in case I had been admitted a little sooner, her life would probably have been saved, as she was healthy, and would have been equal to several hour's walking exercise. In case III the patient appeared so emaciated from previous disease, as to be quite unequal to the fatigue of exercise.

[illegible]

acts of suicide and accidents, it would be as well, perhaps, if

[illegible]

pensing the most useful, and much-used, but to some extent dangerous medicine.

CASE OF CHRONIC DYSENTERY, WITH REMARKABLE LESION OF MUCOUS MEMBRANE OF STOMACH.

By KENNETH McLEOD, A.M., M.D., L.R.C.S.E.,

[illegible]

ing; his tongue was thickly furred, and appetite bad. His spleen

[illegible]

benefit as regarded his dysentery, and slight improvement in his general health. On the third day of his residence his feet

[illegible]

having been, in the meantime, convicted and sentenced. His symptoms on re-admission were similar to those observed during his previous stay in hospital. His dysentery was not quite so acute as formerly, but his stools were still very frequent, and of a

[illegible]

Without entering into the details of his case, for it is to the *post-mortem* appearances that I wish to draw attention, he

[illegible]

containing quinine, sulphuric acid, and sulphate of iron in infusion of chiretta, ipecacuanha, chalk, and opium, and a nutritious diet.

[illegible]

gradually more emaciated and feeble. The dysentery continued

[illegible]

tivæ icteric; no ulcers or other peculiarity on surface.

[illegible]

colour; no adhesions. The lungs were emphysematous anteriorly, and infiltrated posteriorly, apparently with the same kind of fluid which filled the pleural cavities.

Pericardium contained a large quantity of reddish serum.

[illegible]

valves were wider than normal, and the heart flabby. The

[illegible]

carneæ hypertrophied. The anterior lip of the mitral valve

[illegible]

deeply stained; the aorta showed no lesion.

IV. Abdominal cavity.

The *peritoneum* contained a considerable quantity of serous fluid. Pharynx and œsophagus healthy; the stomach was empty.

[illegible]

mucous membrane was bare near the cardiac opening of the organ, and the exudation was disposed over the neighbourhood of the pyloric in points. Some patches upon the great curvature were also free of exudation. The mucous membrane in those places was dark, and in a state of chronic congestion. The exu-

[illegible]

which was best marked along the small curvature of the stomach and over the middle three-fourths of the remaining surface. This surface was partially thrown into rugæ, which were also covered by membrane, and a bulbous outgrowth about the same size, and very similar to the fungiform papillæ of the tongue. The continuous membrane was about a line, or a line and a half, thick. It presented, when viewed with a

[illegible]

in it. It stripped easily off the mucous membrane, leaving an abraded looking, but not ulcerated, surface. On examining it with a quarter-inch objective, it presented, when a little out of focus, a uniformly granular appearance, and was seen, when more carefully focused, and treated with dilute acetic acid, to consist of numerous small cells, mostly of an oval shape, with distinct nuclei and granular contents. Besides this, numerous fat globules, and a multitude of granules and molecules, could be seen; but no fibres or other structures. The club-shaped processes towards the pyloric orifice seemed to issue out of glandular orifices; for, when broken off, small yellow points could be seen, and many of these were dotted over the membrane, apparently indicating when similar processes had grown or were about to grow. Much pigment existed in the mucous membrane all over the stomach in molecules and oval, rounded, or irregular masses. The microscopic structure of these papillæ was similar to that of the continuous membrane. The glands along the smaller curvature of the stomach were enlarged and pigmented. The duodenum presented a pitted appear-

[illegible]

transparent. The rest of the surface showed a pigmented aspect, the pigment being principally developed on the villi. The small intestine contained a thin whitish fluid. The jejunum was somewhat pigmented, but, as it approached the ileum, became lighter in colour. The ileum was abnormally thin

[illegible]

and denser in some spots, indicating former ulcers. In the trans-

process of healing could be seen. The sigmoid flexure and rectum were thickened and contracted. The mucous membrane was covered with a brownish yellow exudation, about a line in thickness, which could be stripped off the surface of it, having an attached looking membrane. The exudation had, under a low power, a perforated or honeycomb-looking appearance, and, under a high power, was seen to consist of cells and granules, with much fatty matter. On the folds of this portion of the intestine many transverse ulcers of various sizes appeared, which seemed to have been the seat of recent hemorrhage. Small circular ulcers could also be observed in abundance over the membrane. The glands along the colon were enlarged and pigmented, the liver was [illegible] tion in a slight degree,—and biliary stasis. The spleen was much enlarged, hard, engorged, and friable.

The kidneys were congested around the pyramids, and the cortical substance of both was undergoing degeneration.

REMARKS.

I have not been able, in any of the works in my possession (including Aitken and Reynolds), to find any allusion to, or description of, the lesion of the stomach described above. Dr Morehead, in the second edition of his "Clinical Researches on Diseases in India," gives details of three cases (Nos. 46, 89, and 90, pp. 239 and 271,) in which lesions of the stomach were observed. These lesions consisted of "patches of injected vessels," "five or six patches of ulceration, one or two of them quite circular with dark, yellow, and brownish sloughs in the centre; the others larger and more or less irregular, also with central sloughs; a dark brown marked appearance without softening at the cardiac extremity," and "a thickened and somewhat softened condition of the mucous membrane, which presented here and there an ash-grey dotted red appearance, with marks of one or two small cicatrizing ulcers. These appearances, though evidencing the fact that the mucous membrane of the stomach is apt to participate in morbid changes more peculiar to the colon, do not seem to be the same in nature, and certainly fall short in extent of the phenomena disclosed by my autopsy. In this the pathological product is evidently an organized adventitious membrane, and the pathological process appears to have been one of abnormal development of the so-called peptic cells contained in the gastric follicles, and perhaps of the epithelium covering the membrane intervening between the glandular inflections. That the glands were principally the agents in this cellular outgrowth is, I think, pretty strongly indicated by the mammillated aspect of its surface, and still more so by the detached bulbous villi of the pyloric membrane, apparently the product of the larger compound follicles scattered over this part of the mucous surface of the organ. The physical characters of the exudation were so like those of the membrane covering some parts of the colon, that it is impossible to consider the stomach lesion different or differently produced. The case appears to be a typical example of one of the most common and easily-understood forms of metastasis, namely, the transference of morbid action from one part to another of a continuous membrane, and falls into the same category with similar phenomena in the course of eruptive fevers.

The gastric process seems, however, to have been more gradual and less intense than the colic. If such is the case, then the phenomena observed in the stomach seem to furnish the essence of the dysenteric process, an abnormal proliferation of normal epithelial and glandular cellular elements. It is in consonance with pathological analogy to suppose that, while a moderate amount of the poison supposed to cause the disease will simply produce this proliferation, a greater amount will cause such graver perversions of nutrition as interstitial infiltrations, denudations, ulcerations, &c.

The other pathological features disclosed by this *post-mortem* examination, the pigmentations and atrophy of the intestinal mucous membrane, the altered character of the blood, the serous infiltrations and effusions all common enough in cases of chronic dysentery, the mode in which this pigment originates, whether it is a deposit or degeneration, has not been as yet worked out. The atrophy of the ileum and its glands, in such cases, does not easily fit in with the character of the morbid process of the large intestine, which seems to be an excess of growth, though of a perverted kind. This man had not reached that time of life when there is a natural atrophying and collapse of the solitary-like glands of the ileum; and yet I have never seen, except in similar cases of chronic dysentery, a more complete atrophy of the mucous element of the membrane.

JESSORE, 14*th April*, 1868.

A CASE OF APHASIA.*

By G. D. McREDDIE,

Civil Surgeon, Hurdoi, Oudh.

WITH reference to M Broca's theory of the faculty of speech being located in the third frontal convolution of the left hemisphere of the brain, I beg to place on record the following singular case which lately came under my observation. Mr——, Barrister, aged forty-five, was admitted into the Hurdoi Jail Hospital on the 9th January. On the 5th instant he had received a latti blow on his head. The only external injury visible was, however, only a slight contused wound on the left and anterior surface of the scalp. No depression of bone, or fracture of the skull, was detected. He was quite sensible; limbs not paralysed; pulse fair, [illegible] He could utter no articulate sound whatever. When told to protrude his tongue, he was unable to do so, but tried to draw it out with his fingers. A sharp purgative was at once administered, and he was placed under close observation. No change occurred in his symptoms until about eight days after the accident. He could now put out his tongue quite in the straight line, and uttered the words "Ram, Ram, Ram" pretty plainly; but an attempt at expressing any other word proved a failure. I might mention that, having been concerned in a riot, his injury, though it lessened the punishment to which he would otherwise have been sentenced, did not excuse him altogether. He got only two months' rigorous imprisonment. On the 17th February, as being quite well in all other respects, he was discharged from the Jail Hospital, and set to some light labor.

He continued in Jail up to the 23rd March, on which date he was released. He had regained to a considerable degree the power of speech, but his utterance as yet was not quite distinct. He seemed not to have sufficient control over the movements of the tongue to regulate its action sufficiently for clear expression. He spoke as if drink had caused a temporary impediment in his speech.

13*th April*, 1868.

TWO CASES OF POISONING BY MAJOON OR MAJUM.

By P. CULLEN, M.D.

Civil Surgeon, Hoshungabad, Central Provinces.

CASE I.

MUSSAMUT ALLARUKEE, aged thirty years, was brought to hospital, between 11 and 12 o'clock on the night of the 3rd of April, in a delirious state, caused, it was stated, by eating some sweetmeats about six hours previous to admission. Her friends had given her some tamarind syrup mixed with dhye, which had produced vomiting.

On admission, her symptoms were: pupils considerably dilated, but sensible to the light; pulse about 90°, rather feeble; temperature of body rather lower than natural; could sit up, but not stand; talked incoherently, and kept picking at the bed clothes; when the light was held near her face, she would put out her hands as if to lay hold of it, but appeared unable to direct her movements properly, and, after various vain attempts, would desist when grabbing at it. A sulphate of zinc emetic was administered, but it was with the greatest difficulty she was got to swallow it, and cold was applied to the head, and she was made to occasionally inhale a little carbonate of ammonia. She vomited a little in about two hours' time, and then fell off to sleep. At 8 o'clock the next morning she was quite well.

CASE II.

Mussamut Baggeah, aged fourteen years, daughter of the above, (Mussamut Allarukee,) was brought to hospital with her mother, and was said to have partaken of some of the same sweetmeat, but had not had anything given to her, nor had she vomited.

* [illegible] Address, as generally [illegible] the [illegible] [illegible] [illegible]

made by boiling the leaves of the gunjah plant in milk, and strained. In these cases I found, by a microscopical examination, portions of leaves both in the sweetmeats and in the matters rejected by the girl.

leaves, milk, ghee, poppy seeds, flowers of the thorn-apple, the

CASE OF SNAKE-BITE, CURED BY STIMULANTS.

By Isaac Batson, M.D.,

Surgeon, H.

inflicting the wound, immediately retreated into its hole, so

ingly brought her at 12 noon to the Charitable Dispensary under my care.

On admission, she was found partially insensible, with pupils moderately affected by light, conjunctivæ yellowish, and pulse

swelling

composed of ammonia carb. gr. v., spt. vin. rect. ʒi., mist.

hours from her admission she was perfectly cured.

remedy tested with the prompt administration of stimulants, used on record.

LIST OF MEDICAL OFFICERS WHO PASSED AT THE LAST COMPETITIVE EXAMINATIONS FOR THE THREE PRESIDENCIES IN INDIA.

1.	A. S. [illegible], M.D.	
2.	A. [illegible], M.D.	
3.	J. H. Newman, M.D.	
4.	H. [illegible], M.D.	
	Bombay.	
1.	J. J. [illegible], M.D.	
2.	E. A. Trimmell	
3.	F. A. Harvey	
4.	W. [illegible]	
	Madras.	
1.	W. [illegible], M.B.	
2.	J. Davidson, M.B.	
3.	A. S. Jayakar	
4.	J. F. Keith, M.B.	

LIST OF BRITISH MEDICAL OFFICERS WHO PASSED AT THE LAST COMPETITIVE EXAMINATION FOR HER MAJESTY'S SERVICE.

1.	Corbett, R. de la C., Cork and Dublin	5197
2.	Wollowicz, *Count*, C. N. Y., Munich, Paris, and St. Petersburg	
3.	[illegible]	
4.	[illegible]	
5.	[illegible]	
6.	[illegible]	
7.	[illegible]	
8.	[illegible]	
9.	[illegible]	
10.	[illegible]	
11.	[illegible]	
12.	Cuthbertson, R. A., Dublin	
13.	[illegible]	
14.	Gallway, M. M., Cork	
15.	Lyons, F., Cork	
16.	Hare, G., Cork	
17.	Stewart, S. J., Edinburgh and London	
18.	Gunning, J. D., Belfast and Dublin	
19.	[illegible]	
20.	Anthony, M., Cork and Dublin	
21.	[illegible]	
22.	Rae, J. R., Dublin	
23.	[illegible]	3921
24.	Wilson, W. D., Dublin	
25.	Cotter, S. K., Dublin	
26.	Barroll, G. W., London	
27.	Barry, J., Cork	
28.	Bennett, W. F., Cork and Dublin	
29.	[illegible]	
30.	[illegible]	
31.	Anderson, D. H. B., Edinburgh and London ..	
32.	Waylan, F. H., London	
33.	[illegible]	
34.	[illegible]	
35.	Anderson, A., Montreal	
36.	Fitzgerald, E. M. D., Cork and Dublin	
37.	Kingston, T., Cork and Dublin	
38.	[illegible]	
39.	Shaw, G., Dublin	
40.	Heather, D. C. W., Dublin	
41.	[illegible]	
42.	Morgan, R., Cork	
43.	Maunsell, R. F., Dublin	
44.	[illegible]	
45.	Duncan, G., Montreal	
46.	Jago, R., Dublin	

medicines and the European mode of treatment is so generally

not able to remove chronic diseases, "and it is even doubtful if many of them know how to treat ordinary complaints. The means by which native doctors can, by various rules and medicines, remove chronic fevers, is quite beyond the comprehen-

each Mofussil hospital. By studying the *Yajur Veda*, proper medicines may be found for all diseases."

In the *Bengal Gazette* there are given no fewer than four "tried" antidotes to snake-bite. The first method is to make a paste of the seed of the *croton* fruit, which, wherever the bite may be, must be plastered on the *eyes* of the patient, so that it may come well in contact with the pupils. We are not surprised to read that "when this medicine comes in contact with the pupils of the eyes," the patient will cry out that his eyes are going." He also includes rather ambiguously among this medicine may be given to a dying man." The other antidotes seem to be quite as specific.—*Pioneer*, 27th *April*, 1868.

MR. JOHN GRIFFIN, late a member of the Subordinate Medical Department of the Presidency of Madras, has been appointed Secretary by the Dewan to the Rajah of Venkatagherry. C. S. I. —*Madras Standard*. (*Pioneer*, 24th *April*, 1868.)

Notices to Correspondents.

AMPUTATION OF THE PENIS.

Assistant Surgeon C. H. M.'s 88th Ref., has favored us with an [illegible] which in [illegible] week or [illegible] having passed [illegible] the case, we have not [illegible] the part of [illegible] with regard to [illegible] especially as the operation [illegible] the exigencies of a Military Surgeon, [illegible] it could possibly enter, or remain in, the [illegible] Mr. C[illegible] all matters of Periodical. [illegible] offered for [illegible] the penis, [illegible] amputated cancer of [illegible] and [illegible] the inguinal glands, which [illegible] removed. [illegible] Hernia suffering from [illegible] [illegible] as well.

FRANCE.—A [illegible] that either Muhammad or the opposed [illegible] is destroyed by Lent and [illegible] aspects of [illegible] the [illegible] of the one, or the opinion [illegible] the subject.

EXAMINATIONS IN NATIVE LANGUAGES.

UMBRA [illegible] a young medical officer who has not passed in [illegible] to staff allowance when he recently [illegible] of Government, the medical officer of which is on privilege [illegible] the language has nothing to say to *the question. An officer going on privilege leave draws his full pay* [illegible] and under whatever private arrangements he [illegible] but the latter cannot claim anything [illegible] to regard to the matter. Government merely [illegible] privilege leave shall [illegible] to the part is to either their own terms. A M[illegible] officer, who is absent on general leave, and [illegible] of examination, should have passed the language, if he [illegible] Proviso, 1867. The [illegible] that the *service since that date will*, under no circumstances, *draw more than their* "*unemployed pay*" (*para.* 29, *Secretary of State's Despatch No.* 340, [illegible] have passed the "*Lower Standard.*" *Secretary of State's Despatch No.* 235, *16th November*, 1866, *para.* 7.)

SUB-MEDICOS.—For [illegible] Widows' and Orphans' [illegible] of the Government. *We will deal with the subject, however, at length, in the next number.*

NAME ILLEGIBLE, A LICENTIATE, *Bombay*. *Your contribution shall appear in the next issue.*

Communications have been received from

G. E. POOL, *Civil Assistant Surgeon, Goojrat.*

A. R. HALL, [illegible].

DR. T. MURRAY, [illegible], *from whom we hope to receive further contributions.*

P. CUNNINGHAM, [illegible].

J. B. BARNES, [illegible], *Lucknow, Royal Artillery.*

C. M. [illegible], *Superintendent of Police, Central Provinces, C. I.*

Domestic Occurrences.

DEATHS.

PEARS.—At [illegible], on the 2nd May, JOSEPH FRANK, [illegible] of J. A. [illegible].

[illegible].—At [illegible], on the 3rd May, ROBERT DAVID, [illegible] Medical Service, [illegible].

[illegible].—At [illegible], on the 4th May, [illegible].

[illegible].—At [illegible], on the 5th May, [illegible].

[illegible].—At [illegible], on the 6th May, [illegible].

[illegible].—At [illegible], on the 7th May, [illegible].

[illegible].—At [illegible], on the 8th May, [illegible].

[illegible].—At [illegible], on the 9th May, [illegible].

[illegible].—At [illegible], on the 10th May, [illegible].

[illegible].—At [illegible], on the 11th May, [illegible].

[illegible].—At [illegible], on the 12th May, [illegible].

[illegible].—At [illegible], on the 13th May, [illegible].

[illegible].—At [illegible], on the 14th May, [illegible].

[illegible].—At [illegible], on the 15th May, [illegible].

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[illegible].—At [illegible], on the 19th May, [illegible].

[illegible].—At [illegible], on the 20th May, [illegible].

[illegible].—At [illegible], on the 21st May, [illegible].

[illegible].—At [illegible], on the 22nd May, [illegible].

[illegible].—At [illegible], on the 23rd May, [illegible].

[illegible].—At [illegible], on the 24th May, [illegible].

[illegible].—At [illegible], on the 25th May, [illegible].

[illegible].—At [illegible], on the 26th May, [illegible].

[illegible].—At [illegible], on the 27th May, [illegible].

[illegible].—At [illegible], on the 28th May, [illegible].

[illegible].—At [illegible], on the 29th May, [illegible].

[illegible].—At [illegible], on the 30th May, [illegible].

[illegible].—At [illegible], on the 31st May, [illegible].

[illegible].—At [illegible], on the 1st June, [illegible].

[illegible].—At [illegible], on the 2nd June, [illegible].

[illegible].—At [illegible], on the 3rd June, [illegible].

[illegible].—At [illegible], on the 4th June, [illegible].

[illegible].—At [illegible], on the 5th June, [illegible].

[illegible].—At [illegible], on the 6th June, [illegible].

[illegible].—At [illegible], on the 7th June, [illegible].

[illegible].—At [illegible], on the 8th June, [illegible].

[illegible].—At [illegible], on the 9th June, [illegible].

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[illegible].—At [illegible], on the 30th June, [illegible].

[illegible].—At [illegible], on the 1st July, [illegible].

[illegible].—At [illegible], on the 2nd July, [illegible].

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present; but, it needs no Daniel to interpret the full meaning of the writing. [illegible] it is steadily rising, and we venture to predict that, ere another half-century has passed away, the cloud will have risen far into the sky with increased proportions, and that Assistant Surgeons *thus generated* will be numbered by scores and fifties. Such a result will be welcomed by the philanthropist, and by all well-wishers of India. We shall sincerely rejoice to see that the highest rewards the State can offer are not withheld from the lowest of its subjects, who have proved themselves worthy to receive them. But there is a prevalent feeling in some sections of European society against native medical practitioners, however well-educated, being appointed to independent medical charges; [illegible] ment, have dwelt upon this objection, especially operative where ladies are concerned, as the probable reason of their prayer having [illegible] himself duly accredited, such charges will fall to his lot as a [illegible] naturally cannot see why the little word *Sub* should make all the difference, the men being nationally the same. Of course there is a certain difference, though it is one only of degree.

This, however, is not the result to which we attach the chief importance. We are more concerned about the denudation of our dispensaries, which is really becoming a very serious question. If we could be satisfied that good men would, after leaving College, settle down in different parts of the country, *in remote towns*, as well as in Calcutta, and start dispensaries of their own, our anxiety would be in a great measure removed; but when we know from experience that Bengalis, who constitute the main body of the primary class, the class from which Sub-Assistant Surgeons are taken, are always urgently anxious to get back to Bengal after a very short absence only in the Upper Provinces, this idea, so far as they are concerned, cannot be entertained. They might settle in various parts of their native land, as the [illegible] the requirements of the masses. It is more necessary, if possible, [illegible] known that, as a rule, our best men either go home or settle in the metropolis, in either case being lost to the State. Consequently, an inferior class only are available for these important situations. What is the remedy? Either improve the status and [illegible] other than Bengalis for this grade,—men who will willingly take service, or settle down in private practice *anywhere*. As [illegible] natives of other parts of India be educated for general service, or [illegible]

[illegible] sufficient progress in the country to be independent of *Govern-*[illegible] while longer. And, if we wish good men to enter our service, hoping that they will feel their way to finding a good footing for themselves hereafter, we must, we venture to think, offer them sufficient inducements to do so. With the prospect of [illegible] he encountered the dangers and *desagremens* of the sea, his prospect of success in England being by no means certain. Fifty rupees a month added to each of the present payments, with a slight advance upon the mileage when travelling, and the [illegible] society, which the mere "so-called" Native Doctor (and with whom he is at present often confounded) is not, would, it is believed by those who have carefully studied the subject, have the effect of inducing more Sub-Assistant Surgeons to declare for Government service and to remain attached to it.

BENGAL MEDICAL RETIRING FUND.

We [illegible] "Fiat Justitia," upon the [illegible] Medical Retiring Fund in Bengal.

The writer [illegible] the Fund as a "source of [illegible] Government for inaction in their behoof. He wishes the flame [illegible] upon a better footing." We must remind "Fiat Justitia" that [illegible] by the Government as a fund, for its financial position was at the time most unsatisfactory, nor would there have been any [illegible] to some extent responsible for this, as, owing to the diminished number of Assistant Surgeons who entered the service after the mutiny, the resources of the Fund were becoming seriously diminished at the time. But the Government have considered this fact in accepting the fund with its liabilities. Without Government aid we should probably have been compelled to reduce the number of our annuities even below seven; [illegible] the Secretary of State has [illegible] that, after the [illegible] the Government, the Government have nothing to do. They have taken the Fund as it stood at the time of the transfer of India to the Crown, and merely guaranteed that the subscribers should experience no loss by the change. There is some discussion still going on as to the exact terms of the deed of transfer, but, practically, all the responsibilities have been assumed by the Secretary of State for India.

With regard to the [illegible] working of the Fund, we [illegible] We were led to believe (on the day that we made our bow to the Chairman of the Honorable East India Company under the auspices of our redoubtable leader Mr. Clark) that an annuity would be available after seventeen years, and lo! on arriving in India, we found that [illegible] Many subscribers

bers would of course gladly receive the amount of their subscriptions back, to wit, those who are not likely to become entitled to an annuity, to say nothing of the *interest* of it for several years. Others again, those who have paid more than its half value, which, were the annuity available, would entitle them to receive it, would prefer waiting and realizing in due time this important addition to their income. Nowhere else would an investment to the same extent yield a like return.

There are these two distinct classes of subscribers, with conflicting interests. But with so slender a capital wherewith to supply the necessary number of promised annuities, it is not probable that the Government would reduce it still further by giving back any subscriptions to those who did *not* wish to remain and wait for them. It is indeed "a fact that men now-a-days are thirsting to leave the country." "Fiat Justitia" goes so far as to say that "their interest in it has gone; it stinks in their nostrils." This may be so; but other causes, of a far more potent nature than any gubernatorial disregard of our wishes with respect to the Retiring Fund, have combined to produce this unhappy and, so far as the welfare of the people of India is concerned, most unsatisfactory result.

SUBORDINATE MEDICAL DEPARTMENT.

AMONGST our extracts will be found a letter addressed by "Sub-Medicus" to the Editor of the *Pioneer*. The writer adopts a tone, with reference to this journal, which is very unbecoming, and which, moreover, conveys the idea that we do not sympathize sufficiently with the Department whose cause he pleads, and which we pleaded ourselves in a leading article published in March, 1866. The Subordinate Medical Department may rest assured that their cause is safe in our keeping; safer, shall we say, than in that of "Sub-Medicus," when he would have us publish a letter which could only tend to injure their prospects with the Government, whilst its singular mixture of raillery, pathos, and derision would certainly not secure for himself the sympathy which men are ever ready to extend to all who are *patient* in misfortune.

We subjoin an extract, and would then ask the members of the Department whether they consider that their interests would be advanced by the publication of such a letter in its entirety.

"How long, O tender and gracious Government, how long! How long are they (the much and sorely aggrieved members of the Subordinate Medical Department)to remain unheard, unheeded, unredressed their pressing grievances? In behalf of nearly 500 hard-worked and badly-paid servants of Her Britannic Majesty in India I ask this urgent question. But I sicken when I know I ask in vain for a reply. I might as well whistle a jig to a milestone, in view to eliciting a caper therefrom, as to expect to find this question answered, at least by any high functionary of this mighty and masterly inactive rule of ours. Our Government has a heart of adamant, and ears of some tougher, impenetrable substance still."

We cannot but express extreme surprise that "Sub-Medicus" should venture to think that the Editor of the *Indian Medical Gazette* would allow the journal, which he has the honor to conduct, to become a medium for the utterance of such sentiments. That much remains to be done for the Subordinate Medical Department, no one is more thoroughly aware than ourselves: but we would counsel its members to exercise patience yet a little longer, and to rest assured that their interests are not lost sight of by the Government. We are very happy to receive communications from all who are desirous of enlisting our services in their cause; but we must insist upon the communications being couched in suitable language, or, like the letter from "Sub-Medicus," they will not be published.

ON INSOLATION.

IN our April number we published the commencement of a paper, (to be continued hereafter,*) by Surgeon Barnard, on the "Pathology and Treatment of Coup-de-soleil or Insolation;" and the subject has likewise come under discussion, at a meeting of the "Bengal Branch of the British Medical Association," in Calcutta.

The profession is under considerable obligation to Mr. Barnard for drawing attention to a mode of treatment, in heat asphyxia, which, we believe, has not, in that disorder, been adopted to the extent that it, perhaps, might have been: although we venture to think that the amount of success which the author predicts for it is hardly to be anticipated, *viz.*, recovery in nine cases out of ten. Mr. Barnard speaks of the condition, which he would treat in this way, under the synonymous terms "coup-de-soleil" or "insolation;" but we take leave to designate it under, what we conceive to be, the more appropriate head of heat asphyxia.

The treatment of a disease should always, where possible, be based upon its pathology; and, although different causes may lead to the same results, requiring much the same treatment in the main, it is absolutely necessary that we should separate these causes clearly in our minds, as a due consideration of each may lead to more correct notions of their individual pathology. Asphyxia, for example, is a condition which may be produced in several ways: the lungs may become engorged from cobra, or like, poisoning; from drowning; under the influence of heat alone; or of heat *plus* drink or a vitiated atmosphere, &c., &c. It may be good practice to keep up artificial respiration in each of these cases, but, with reference to the agent which, immediately or remotely, has produced the asphyxiated condition, something more may be required, too. If it be a case of ardent fever, quinine in large doses may be absolutely called for. It strikes us that Mr. Barnard lays too much stress upon artificial respiration, *per se*. Were it not that we satisfied ourselves, at the discussion which took place at the meeting of the Medical Society, that the author of the paper quite intended to include, in his category, what is sometimes spoken of as "ardent fever" synonymously with insolation, we should have inferred, from a perusal of his paper, that he had not so intended; for, in none of the cases cited by him is the characteristic feature—the pathognomic sign of the disease—*viz.*, *pungent heat of the skin*, once mentioned. We are to understand, then, that artificial respiration would be the remedy on which Mr. Barnard would most rely in ardent fever, as much as he would in pure ictus solis, coup-de-soleil, or sunstroke, where the individual had been simply *struck down*, his nervous system prostrated under the influence of the shock, *but where there was no pernicious heat of skin*.

This brings us to the question—What *is* insolation? We

* We have received Mr. Barnard's paper, without waiting for his final communication, which, we understand, does not affect the text.

the attention of the profession throughout India to this important question, as, a few years ago, when insolation was

who thought that insolation, with its pungent skin, (ardent

opinion, but we would invite those who are willing to pursue the enquiry during the† coming hot season, when, unhappily,

of Insolation in the 3rd Cavalry, by Surgeon T. H. Butler.

Surgeon, Marwar Political Agency. This author quotes Dr. N.

Brodie's experiment, where death took place apparently as the result of mere heat. But in this case there was no portal open for the relief of the heated blood; there was no perspiration. The animal died, therefore, from the prostrating effect of the accumulated heat. So that, free perspiration being essential to enable human beings to remain in ovens heated to

instances quoted by Mr. Barnard from Sir T. Watson's book, this case of the rabbit does not invalidate the proposition that something more than mere heat is required to produce a fatal result. Doubtless, in debilitated constitutions, where there

whatever being in operation, and the more readily where the

to insolation or ardent fever that we would especially apply our remarks. It is remarked by those who maintain that heat alone will produce it, and who ignore malaria, that cases of insolation

year, viz., the autumn. This, as a rule, is true, though there are exceptions. But cholera and insolation often go together, and the former is undoubtedly associated with a poisoned state

Thomas Watson himself uses the term, and after him Mr. Barnard synonymously with mere sunstroke. For its deeper meaning we are indebted to Dr. Scriven, whose classification of Indian fevers is simple, yet thoroughly practical, whilst it is eminently, we believe, true.

Whilst then we thank Mr. Barnard for laying stress upon a remedy, (in cases of heat asphyxia, however produced,) which may not have had hitherto a sufficient trial, we would wish to urge the younger members of the profession, of those who are practically unacquainted with tropical disease, not to draw

fever of Dr. Scriven) is mere sunstroke, and that artificial respiration is the one remedy upon which reliance is chiefly to be placed. Mr. Barnard advocates, it is true, the cold douche for reducing the temperature, which, he believes, is the cause of the temporary paralysis of the cerebro-spinal ganglia connected with respiration (though in his paper, singularly enough, pungency of skin is omitted;—indeed, from the description of his cases, one would think that they were the result of simple shock to the system from excessive heat, cases of mere ictus solis, in short*): at the same time, (our author must pardon us if we are in error,) it would appear that this remedy, upon which, in conjunction with stimulants, we have been most accustomed to rely, is put somewhat in the background. In the single case which came under Mr. Barnard's observation, he does not appear to have used the cold douche at all.

We commend the study of insolation, or ardent fever, to the careful consideration of the junior members of the profession. We are not yet sufficiently enlightened on the action of malarious, any more than of other, poisons, to be able to say, with precision, that malaria has nothing to do with the production of certain diseases. Our chief object, in penning these remarks, is to invite further enquiry, as to whether malaria or a poisoned atmosphere, *plus* heat, has any share in causing insolation,

carefully recorded cases in the columns of the *Gazette*.

Jacob, and another from Dr. Valentine, on the subject of previous

I. M. G.

March last, with reference to educational progress in Jeypore. The former takes exception to "Observator's" letter, and says that "most of the statements are exaggerations," whilst "many are not true." It is not true, for example, that the Maharajah considers the establishment of a school of arts more important than a medical school. We are heartily thankful to hear it. He goes on to say that he believes the day not far distant when a medical college will be again established in Jeypore, and "on such a system, too, as will redound to the credit of this State and all concerned." This is indeed a matter for rejoicing. Dispensaries are now being established, adds Lieutenant Jacob, for the first time, all over the State, and there is a Medical Hall in the city which can meet the demands, not only of its own dispensaries, but the wants of other States also. Hygiene and prison discipline are now being introduced. Lieutenant Jacob then wishes to do justice to an absent man, Colonel Price, to whom, says the writer, all the credit in road-making, and other engineering improvements, is entirely due. Dr. Burr is entitled to none of it. This is the substance of Lieutenant Jacob's letter. He concludes by regretting that we have not made the *amende honorable* to Dr. Valentine for the "unjust imputations" cast upon him in our article.

Dr. Valentine begins by thanking us for giving him an opportunity of "pointing out the groundless nature of these charges," and solicits another for informing the profession, who have been so grievously led astray by "Observator," of the real causes that led to the abolition of the school. From Dr. Valentine's statement, it would appear that a report of the working of the school was called for after it had been six years in existence, no report having been submitted during the whole of this time. It was drawn up and sent to the Government of India through the Inspector-General of the Medical Department. The Government of India forwarded it to the Governor-General's Agent, who was requested to explain certain obscure points in the report, and to give his opinion upon the working of the school. The Agent's opinion was unfavorable. He recommended that the school should be broken up, and the students be sent to Calcutta for instruction. The Maharajah was then addressed by the Government. It was suggested to him that he should place the school upon a more extended basis with a view to his original intentions being satisfactorily carried out; but that if he did not feel disposed to do this, he had then better break it up, and let the scholars be educated in Agra. His Highness became naturally desirous to know how it was that an institution which he had treated so liberally should have yielded so unsatisfactory a return; and he wished to be informed, moreover, of the nature of the facilities which would be afforded for the instruction of the students at Agra and in Calcutta, if it were decided to send them to either of these towns. Meanwhile, Dr. Burr made an effort to secure the continuance of the school, and the supreme Government consulted Dr. John Murray. He, too, decided against it as being an incomplete establishment, with a defective system; and recommended Agra. Dr. Ewart, the Officiating Principal of the Calcutta College, and Dr. Moore, of Aboo, strongly recommended that the school should be continued. The Maharajah and Council, however, considered that it had better be abolished. The fiat went forth. *Deleta est.* The medical school of Jeypore is no more.

Dr. Valentine then tells us that the Maternity Charity is an utterly worthless institution, and that nothing can be said in its favor. He condemns "Observator's" communication in strong terms, calling it a production "three-fourths of which have no foundation whatever in fact;" the remaining fourth requiring so many deductions, that scarcely a grain (!) of veracity is left.

So much for these communications. The editor of a journal is mostly dependent, for the information which appears in its pages, upon contributors who are kind enough to keep him *au courant* with all that is going on beyond the reach of his own "ken." He cannot always analyse the facts communicated to him; and if they are authenticated by the name of the writer, (further vouchers cannot be demanded,) he must be satisfied. He becomes a chronicler of passing events, and, when required, a commentator. The Editor of the *Indian Medical Gazette* offends no one willingly; and if any personal injustice is caused by his publications or remarks, no one regrets it more than himself. This journal is not intentionally a vehicle for the display of personal animosity or flattery.

The main fact in connection with this correspondence, which is interesting to all who have medical progress in India at heart, is the downfal of an institution which *might* have rivalled those of a like nature which are doing so much good in Calcutta, Lahore, and elsewhere. We have recorded our opinions on this subject, under another heading, in the present number; and we can only say here that we sincerely trust, with Lieutenant Jacob, that the day is not far distant when a Medical College, with hospital attached, will rear its head in Jeypore upon a foundation similar to that of like institutions in Calcutta, and from whence Sub-Assistant Surgeons shall be given to India of a type, as regards physique, superior to that of the Bengali, and willing to serve the State in any part of the country, (though destined for Rajpootana especially,) without being afflicted with those terrible attacks of *nostalgia*, or home sickness which so interfere with the efficiency of that otherwise most useful native medical officer.

MEDICAL ORDERS.

With the present number of the *Indian Medical Gazette* we have issued, in the Supplement, a reprint of all the recent Orders affecting the Indian Medical Service from the original Warrant dated May 16th, 1844, to the present time.

This will likewise be published in octavo size, and be available separately, in the form of a pamphlet, at 1 Rupee a copy.

We would recommend our medical friends to secure the present opportunity of possessing themselves of these several Orders, offered as they are in so compendious a shape.

At an ordinary monthly meeting of the Medical and Physical Society of Bombay, held on the 4th instant, a paper contributed by Dr. Beatty, on the efficacy of large doses of nitre in curing fever, was read. The dose advocated is ten grains every second hour. Dr. Beatty states he has now lost all faith in quinine as a remedy for intermittent fever in the tropics, and, moreover, has almost abandoned its use as a febrifuge since he learnt the great efficacy of nitre used after the manner recommended by Dr. Sawyer, of New York. "It appears as though Nature herself," says Dr. Beatty, "intended this remedy to be used, as she has so bountifully supplied it in those countries (Sind for example) in which this particular form of fever is so prevalent." None of those present at the meeting had tried the remedy in question in large doses, or had any one lost faith in quinine. It was, however, resolved that a trial of nitre, as recommended, should be made.—*Times of India, (Pioneer, 20th April, 1868.)*

Meetings of the Bengal Branch of the British Medical Association.

(Continued from p. 119, vol. iii, 1868.)

* * *

with the exception of one of the most important—the reduction

The necessity for this measure had been so obvious, that the recommendations of the Committee on this subject had been anticipated

so ill-provided with accommodation for the sick poor as Calcutta

justified it. Under the old system, each patient had a fair allowance (1,530 feet) of cubic space, but a very limited one (only

each patient had 2,391 cubic, and ninety-one superficial feet. Even

pitals were not peculiar to them, but were shared more or less

sums lavished upon many of these. The modern principles of hospital construction were admirably laid down in Dr. Sutherland and in the valuable Report (styled Circular No. 6) from the Surgeon General's Office at Washington, published in 1865. The

on the modern system in their recent war, and had found the plan very valuable. There was no reason why it should not

Netley, Malta, Paris (the Lariboisière), and, Dr. Fayrer was

Calcutta. Dr. Fayrer then proceeded to consider the statistics of surgical operations in the Medical College Hospital for two years before, and for two years after, the number of beds was famine, and this led to a higher death-rate for that year than surgical operations had rather increased during the last two

Dr. Fayrer attributed the decrease of pyæmia and similar diseases to the introduction of the treatment of wounds and operations by

sphere, and of the various modes in which it was used at the Medical College Hospital, Dr. Fayrer said that, while his colleague, Mr. Partridge, and he could not confirm all Professor

pleased with the effects of carbolic acid. He believed that it

slight chill or injury, or change of air, a sea voyage, &c., acted as

occurs sometimes even when the urethra is healthy, but is

to the formation and absorption of septic matter. But the fever often occurs where there is no laceration; and, on the other hand, it is rare after the operation of perineal section. It is more probable that catheterism in such cases excites reflex

tetanus. Even where there is laceration of the urethra, the

absorption of septic matter. He feared that it was not possible to predicate the appearance of these constitutional symptoms. They were more likely to occur in cases of old stricture, with thickened bladder, and probably diseased kidneys. In such cases the patient should be prepared by rest, and dilatation of the stricture should be effected gradually and with little violence, and should be stopped for a time if febrile symptoms appear. Dr. Fayrer then detailed two cases in which dilatation of a stricture had been followed by fatal constitutional irritation.

rather older looking than their reputed ages (38 and 41), and the liver of one, and kidneys of the other, were somewhat fatty; but, on the whole, they appeared average healthy subjects. In many

one case in the iris), serious intestinal changes, or other local lesions, follow catheterism.

The last subject which Dr. Fayrer brought forward was that of the modification of Mr. Syme's operation for the radical cure of hernia, which he had introduced in 1862, and had since employed in sixty-seven cases. Of these one proved fatal from erysipelas, eleven had failed, nine had been relieved, and in

been complete. Dr. Fayrer then shewed the instruments

patient who had died from another cause five months after the operation, and some patients on whom he had lately operated.

In consequence of the lateness of the hour, it was then agreed to adjourn Annual Meeting till 8 P. M. on Tuesday, the 17th March.

The Meeting then resolved itself into an ordinary monthly meeting, at which the minutes of the last monthly meeting

Dr. F. W. Innes, C. B., Deputy Inspector General of Hospitals, H M's British Forces.

The Meeting

The

British Medical Association was held in the Theatre of the Medical College at 8 P. M. on Tuesday, the 17th March, 1868. Dr. Chevers, President, in the chair.

These had had the effect of maintaining the disease in those districts where it already prevailed, and of introducing it into

Bengal differed in no essential point from ordinary intermittent or remittent malarious fever, had been confirmed by his experience in this water-field now under observation. He would now redeem the promise made by him in 1866 to treat of the questions of malaria, of the pathological relation borne to the various organs by the diseases which it induced, and of the treatment of, and prophylaxis against, its effects. Malaria had never been isolated, but from the constancy with which it was generated wherever heat, moisture, and decaying vegetable matter were found in contact, and from the similarity in its effects on the system in all places, we were justified in attributing a distinct entity to it. It was generally supposed that malaria existed mainly as vapour, and entered the system through the lungs; but he was convinced that the entire dermo-intestinal system was as often the channel through which it was introduced. It was well known that water *absorbed* malaria, but it had not yet been proved to have *generated* it. Much grosser substances, such as metallic mercury finely divided, could enter the system through the intestines or the skin. Dr. Juggo Bundo Bose instanced two tanks in his own village, both of which were filled with vegetable *débris* by the cyclone of October 5th, 1864. One was immediately cleared out, and its water remained perfectly wholesome. The vegetable matter was left to rot in the second, which became so foul that the fish in it died, and no one could use the water for a month. When the people began to use this tank again, all who drank from it, or even bathed once in it, suffered from the fever. It is a question whether all the organs on which malaria exercises a deleterious influence are primarily affected, or whether some are only affected secondarily, owing to the disease set up in others. Dr. Juggo Bundo Bose thought that the blood was the part of the body mainly affected, (either primarily or through the action of malaria on the organs concerned in its formation and disintegration) and that the altered state of the blood led to changes in other organs. He attributed the leucocythæmic state of venous blood less to increased formation of white corpuscles than to the decreased formation and the more rapid disintegration of the red ones.

The present epidemic is essentially a malarious one. It has lately spread to villages in the vicinity of Mamaree, Boichee, Tarkeshwar, &c., and is still rampant in Pandua and several of its old haunts. The duration of the epidemic in any district varies from one to eight years, but averages three and a half years. The fever is generally intermittent, more rarely remittent, and always of a low and congestive, not asthenic and inflammatory, type. Periodicity and pertinacity are its two most striking characteristics. Each recurring attack may consist of from one to twelve or thirteen paroxysms of fever, but these attacks continue to recur, at intervals varying from two to six weeks, for many months, or even for six or seven years. Even change of air does not at once remove the disease. In one case a stay of six hours in the malarious districts brought on a fever which continued to recur for eighteen months.

The disease only differed in a few points from ordinary intermittent or remittent fever. In the first paroxysm was usually preceded by a rigor, and the later ones by ague. Dr. Juggo Bundo Bose had, however, seen some alarming cases of ague with collapse preceding the first paroxysm, and he had heard of two such cases which ended fatally. The sweating stage and subsequent intermission are generally well marked. Sometimes there is only a slight remission, and sometimes the sweating stage is attended with formidable, or even fatal, collapse. The occurrence of this collapse seems to bear no [illegible] state of the solid viscera. The first invasion of the fever may be quite sudden, or it may be preceded by headache and languor, &c. The first paroxysm usually begins in the afternoon; [illegible] when first the disease visits a locality; it is then that head symptoms are most common. The approach of the latter is usually sudden. There has generally been only stupor during the cold and hot stages of the earlier paroxysms, which gives place, after three or four returns, to coma, the original congestion, constantly recurring, leading at length to effusion. In [illegible] into continuous delirium, and ending in a typhoid condition. Hepatic complications are also common; they may begin with nausea and pain at each paroxysm, followed by jaundice, and ending in hepatic [illegible], or chronic enlargement. Sometimes [illegible] and the patient dies delirious or comatose. In [illegible] liver has previously become suddenly disorganised. All these inflammatory complications are of an asthenic type, and tend to become more so as they go on. The mortality is very great in this stage of the fever, which lasts for three or four months.

The next stage, lasting eight or nine months, is marked by the return of the febrile attacks, at intervals varying from a fortnight to six weeks, and by the gradual supervention of chronic changes in the solid viscera, such as chronic enlargement of the liver or spleen, Bright's disease, and dropsy, depending on spanæmia, kidney disease, or obstruction of the veins by a diseased liver. If the disease last for more than a month, the spleen is almost certain to be enlarged. It sometimes becomes enlarged from mere residence in a malarious district without the occurrence of fever. The mortality in this stage is comparatively small.

After eight or nine months, the disease enters on its third stage; the fever comes on at shorter intervals; at length it becomes quotidian, and ultimately continuous. Death takes place from the weakening effect of the fever, or from chronic visceral disease, and the mortality is much greater than in the second stage.

Death sometimes occurs in the cold stage of a paroxysm, owing probably to the right side of the heart becoming paralysed from its over-distension by venous blood.

As regards treatment, Dr. Juggo Bundo Bose did not believe in the theory of "change of type." He remembered the sensation caused in Calcutta by the first promulgation of Dr. Todd's views; and though no one would now advocate the use of brandy at the rate recommended by that author, there was certainly a great improvement in treatment since then. Treatment was now *conservative*, and the importance of husbanding the patient's strength was recognised. General bleeding was never wanted, and local bleeding should be very sparingly used in cases of local complications. General bleeding had been advised when death in the cold stage threatens, on the principle of relieving the distension of the heart; but the heart was not like a distended bladder which we could be certain of emptying. Any bleeding which would insure a diminution in the heart's contents would be too large to be safe. The general principles of treatment were the same as in any intermittent fever. Where there was local congestion, (as of the head or liver,) we should try to mitigate this by gentle antiphlogistic treatment (such as shaving the head, cold applications of chloroform, and blisters in case of head symptoms) before giving quinine. We should not lose too much time waiting for a perfect intermission, which might not always occur; for the oftener the fever returns, the worse does the local complication become. Nourishment, in the shape of milk, broths, and wine if necessary, should be given early. The occurrence of fatal prostration in the sweating stage should be looked out for, and met with stimulants and nourishment, &c. Iron, arsenic, and tonics should be given after the fever is checked.

As long as the fever recurs at intervals, quinine, though sometimes failing, is still very valuable. But when, in the third stage, the fever becomes continuous, quinine is useless. Arsenic and strychnia are highly spoken of in this stage by Baboos Surji Coomar Sarbhadhikari and Kanhay Lall Dey. Dr. Juggo Bundo Bose, however, had not found any one medicine particularly valuable, but relied much on [illegible] clothing and diet, and, where possible, change of air. In cases of chronically enlarged spleen, animal broths should be given during the intermission; but when the fever returned, the diet should be reduced in quantity, rice being especially excluded on account of its bulk. Even more care was required where the liver was involved, all fatty matters, and sometimes even milk, should be excluded. Medicinally, splenic complications should be treated with iron, cod-liver oil, and tonics, and quinine, strychnia, or arsenic during the febrile attacks. Where the liver was engaged, the mineral acids and counter-irritation were indicated, with occasional gentle purgatives.

Of the two great remedies in this disease, quinine and change of air, the latter, in too many cases, was not practicable. After eight years' very extensive experience of it, Dr. Juggo Bundo Bose must say that his faith in quinine was somewhat shaken. It checked fever rapidly, but did not seem to obviate the tendency to its recurrence. The inhabitants of districts where the epidemic fever prevails maintain that quinine only checks its appearance without eradicating the poison from the system; that it induces a state of constitution favorable to return of the disease; and that its prolonged use is followed by a sub-febrile state shown by the coming on in the evening of headache, lassitude, and burning of hands and feet, &c. Dr. Juggo Bundo Bose did not believe that quinine generated any proclivity for the occurrence of fever, but he did think that the cures effected by it were less permanent than those by strychnia, arsenic, or some native remedies; and he had also noticed the cate-

to the influence of the poison. Antidotes were administered

changes described by Dr. Halford were not detected.

A small cobra was bitten by a larger one. It appeared as if

effect off in half an hour, and was then as vigorous as before.

Dr. Sircar is doing valuable service in making these experi-

test the capacity of harmless, non-poisonous, snakes for resisting

that they would succumb to it, as all other animals do; and this presumption is fortified by the fact of the young cobra, in experiment No. 5, becoming evidently affected. It would also be interesting to know whether a poisonous snake of one species is proof against one of another, or whether similar poisons only are inoperative against each other.

very best antidote in cases of poisoning by this reptile, we are in a position to say that Dr. Francis, when he imputed belief in this to homœopaths, alluded to a writer in the *Lancet*, and not to Dr. Sircar.

We shall look forward with considerable anxiety to the result of Dr. Sircar's projected experiments with reference to the effect of the poison upon the *fœtus in utero*.

CORRESPONDENCE.

THE BENGAL MEDICAL RETIRING FUND AGAIN.

To the Editor of the "Gazette."

Sir,—A few years ago I had occasion to whose

I believe, sent

which was considered pernicious in the highest degree, and was, number of subscribers. The mild answer of our very paternal

a natural death; but this is not the case. The embers are still smouldering, and ready to burst forth in a fiercer flame than

cowrie do they reap. It vanishes, is lost for ever to a man cries aloud, trumpet-tongued, for reform. A most reasonable proposition was submitted to Government, and it was this, subscribing, the money already paid to be returned with, or even the shape of an annuity whenever we wished to retire. It is a fact that men now-a-days are thirsting to leave the country. For some subtle reason or other, their interest in it has gone; it stinks in their nostrils.

those who desire to see the Fund on a different footing, and call upon them to *persecrere* till something is settled of a satisfactory nature? Will you allow one to lie open at your office for signature, and then transmit it through the regular channel?

The amended proposition which I now submit is this, and I think it a very fair one to all parties, "that one should go on subscribing as heretofore; but that when a man has served his time, and wishes to retire, he may be allowed to do so on the calculated value of the amount he has subscribed, without waiting for his turn." In short, if a man wishes to retire

Yours, &c.,

PALÆOLITHA.

SUBORDINATE MEDICAL DEPARTMENT.

To the Editor of the "Pioneer."

Sir,—It of the Warrant Officers of the Ordnance, Commissariat, and Public Works Departments

cal Warrant Officers should not have been promulgated in conjunction with the other Warrant Regulations, or why it is kept in abeyance, are incidents beyond the circle of my conception. I am, however, satisfied that this unavoidable delay—"this putting off for the morrow which should be done to-day"—arises from no sinister causes in connection with the validity of the claim entertained by His Excellency the Governor-General; but possibly, in a great measure, from the circumstances that either the cherished document has been accidentally put into

India has been sorely embarrassed by financial difficulties arising out of the Abyssinian Expedition. To foster the faithless

false as it would be puerile to assert. Sir Stafford H. Northcote sleeping at his post! No, my friends, believe not so unfounded, so unwarrantable an assertion. An experienced mariner might yawn from fatigue; might scratch his head from accidental circumstances; may, he might occasionally close his eyes from long

waves. With all the inscrutable delays which have occurred in bringing about salutary improvements in the Subordinate Medical Department, I am as sanguine now as ever I was, that

before the halcyon day will arrive, which, with one heave, will remove the burden of their day dreams and night visions. But

luminous rays of brighter days, has it occurred to them that in the event of the pleasant change being effected by the masterly stroke of an avowedly great statesman, that they should exhibit some substantial tokens of gratitude in accordance to the ancient Lacedæmonian usage? Such a measure would not only portray their character towards their munificent commander, but also prove to him that Medical Warrant Officers in India are composed of better material than is generally acknowledged.

With these suggestions to the members of my service, I close this letter, in the hope that you, Mr. Editor, will be so considerate as to

Yours obediently,

WARRANT MEDICAL OFFICER.

SUBORDINATE MEDICAL DEPARTMENT.

TO THE EDITOR OF THE "PIONEER."

MY DEAR SIR,—I would esteem it a great favor if you would permit me to address, through the medium of your valuable paper, a few words to the members of the Subordinate Medical Department. What I have to say to them would be to this effect. In the month of April last I addressed a letter to the Editor of the *Indian Medical Gazette*, embodying the grievances of the service. I have the melancholy happiness to be a humble member of. I spoke of these grievances at length, and in very plain and often terms I showed most plainly that we were unfairly dealt with by the Government; that we deserved not the hard treatment we met with; and that the apathy and indifference displayed towards us and our sufferings, alike by the high officials in the parent service and the Supreme Government of India, partook of a criminal nature. It is the business of these our officials to heartily support us; and it seems surely the duty of the Government to maintain the just balance of justice among its servants. I pointed the strong finger of crimination at the head of our Department for the apathy displayed towards us, and I showed that the Government, by its many recent concessions to the collateral Warrant Services, (while we as a body have been apparently studiedly passed by) only withholds most unfairly from us every measure of justice. What then are we to do? A desperate disease needs a desperate remedy. I'll quote to you what the Editor of the *Indian Medical Gazette* has been pleased to say in reply to my letter:—

"The subject shall not be overlooked, but your communication is hardly admissible as it is. The very heading, 'How long, O Lord, how long,' would, we fear, do injury to the cause which is really deserving of universal sympathy. Why not submit another memorial, temperately worded, drawing attention to the grievances complained of? And, by the way, why not agitate the question of another Widows' and Orphans' Fund? Much misery would be averted if such a Fund were re-established, though it should be on a firmer basis than the last."

Our hearts have grown sick and tired of waiting. In vain have we fed ourselves upon hope. We must act again. The Editor of the *Indian Medical Gazette* deemed my letter inadmissible. He has stated his reason, and it is a wofully trifling one, or perhaps my letter may have been too exhaustive, too lengthy. It was so in a measure. But I could not hide in a nutshell that lachrymose tale of our misfortunes which needs an ocean's flow.

"The subject shall not be overlooked." Let us watch how the leading Medical Journal of Bengal may speak of us.

In the meantime, I bring myself in some measure conspicuously to the front in this matter. I propose that another memorial be drawn up for laying before the Indian Council. I propose that, with a view to my being enabled to place myself in communication with a competent legal adviser in this matter, each member of the Subordinate Medical Establishment addresses me here to the effect that he is willing that I should so move in his interests, and that he is prepared to meet any trifling expense that the measure or movement may entail. May we prosper.

Yours truly,
SUB-MEDICUS.

Cawnpore, 8th May, 1868.

INSPECTOR-GENERAL MOUAT.

IT is more than a fortnight since the *Gazette* contained the announcement that Inspector-General Mouat, at the head of the Army Medical Department in Ireland, had been placed upon half-pay. As Mr. Mouat has been nearly thirty full years in the service, of which no less than twenty-two years were passed abroad, it seemed to us that, whatever were the reasons for the announcement being made, they could not be of a nature to cause such a distinguished officer of the department any injury or annoyance. He might have sought for half-pay perhaps, although it seemed unlikely, placed as he was with regard to his retiring period on full service pension. We waited for an explanation of the *Gazette*; and if what we hear be true—if it be the whole truth connected with the case—it would appear that Mr. Mouat has been ill used, and has a right to appeal from the authorities to those who represent authoritatively the force of public opinion and the legal power of redress for the reversion of a harsh and unwarrantable sentence. Mr. Mouat, be it remembered, is no ordinary man, though if he were a mere office drudge who had gained all his distinctions by hard sitting on easy chairs, he would be entitled to redress for ill-treatment. He was in charge of the Field Hospital for the wounded in the Crimea. He was in China and in New Zealand during two wars, in which the Doctors had more to do than the Generals. He has won the Victoria Cross—a doubtful honour for a Surgeon, but not for a man, and Mr. Mouat may say he could not have helped doing what he did on the day of the Balaclava charge, if he be scolded for having such a decoration on his breast. He is a Companion of the Bath; but, worst is more to the purpose, he is a very energetic, if somewhat "troublesome," Medical Officer. Now what has he done to be forced on half-pay? For forced he has been, in spite of his appeals, remonstrances, and reclamations. Some twenty months ago Mr. Mouat came home from New Zealand and was appointed to Aldershot. Thence he proceeded to Dublin, and he was not very long there when he was ordered to Calcutta to take charge of the Medical Department in India—a coveted post, for it is worth more than £3,000 a year hard cash, and is not very onerous. Mr. Monat, fortified by the opinion of a Medical Board, asked for a respite; he begged for a few months more at home to recruit his health, on which three severe campaigns and tropical service had made inroads, which were augmented by a recent personal injury from an accidental fall. He offered to go to India if the officer next on the list for that post did not like to face the £3,000 a year and a Calcutta command, with a bungalow at Darjeeling or Simla. He was refused, as we hear, any sort of consideration or delay. "Sail or half-pay" was all Dr. Logan had to say, and the Duke of Cambridge, with a laudable desire, we suppose, to strengthen the hands of the Inspector-General, although his Royal Highness must be acquainted personally with Mr. Mouat's services and character, approved of the decision. It seems to us in this view of the facts exceedingly unjust, and we look in vain for anything in the case to warrant such an arbitrary and almost vindictive proceeding. Dr. Logan has, we suppose, good warranty in the rules and regulations of the service, and he will have to show it, and even then the House of Commons may find that Mr. Mouat is a victim to a high-handedness of dealing which enforces the truth of the maxim *Summum jus summa injuria*. If Mr. Mouat made false positions and vexatious excuses, the punishment of compulsory half-pay and its consequent disgrace was very severe. If his pleas were valid, his treatment has been in the last degree discreditable to Dr. Logan.*—*Army and Navy Gazette.* (*Pioneer, 27th April*, 1868.)

Short Notices of Recent Books.

A System of Medicine. Edited By J. RUSSELL REYNOLDS, M.D., F.R.C.P. London: Macmillan & Co. 1868. Vol. II.

In looking at this great work, it is at first somewhat difficult to say whether most praise is due to the Editor for the discrimination he has shown in gathering round him the very lights of the profession, or to the contributors for the care and industry they have displayed in bringing their labors up to the most recent advance of medical science; or, finally, to the publishers, who have displayed so much creditable enterprise in issuing a work, the publication of which must have been attended with so much anxiety and expense. However, we may safely thank all three for one of the best and most comprehensive treatises on medicine which have yet been attempted in any country. The volume before us deals with the whole series of nervous diseases, and with one department of the diseases of the digestive system. The Editor contributes an Introduction, and the articles on Epilepsy, Writer's Cramp, Hysteria, Muscular Anæsthesia, Torticollis, and, assisted by Dr. Bastian, the articles on Congestion of the Brain, Cerebritis, and Softening of the Brain, and Adventitious Product in the Brain; Dr. F. E. Anstie contributes articles on Alcoholism and Neuralgia; Dr. T. K. Chambers those on Ecstasy, Catalepsy, Somnambulism; Dr. T. Hughlings Jackson those on Convulsions and Apoplexy; Dr. C. B. Radcliffe those on Cholera, Locomotor Ataxy, and on all the

* We should like to hear the other side of this case.—ED., *I. M. G.*

Diseases of the Stomach; Mr. J. Netten Radcliffe contributes two articles on Epidemic Cerebro-Spinal Meningitis; Dr. Wilson Fox on Diseases of the Stomach; Mr. J. Netten Radcliffe, on Asiatic Cholera; Mr. Gascoyen, Diseases of the Rectum; Mr. Bird, Diseases of the Urinary Organs; Dr. W. C. Maccormac, Surgical Diseases of the Chest; Mr. Wharton Hood, Diseases of the Breast; Dr. Wilson Fox, Diseases of the Lungs; Dr. Walter Rivington, Diseases of the Throat; Dr. Sibson, Diseases of the Lungs; Dr. Quain, Diseases of the Heart; Dr. Sieveking, Diseases of the Nervous System; Dr. Gull and Dr. Sutton, Diseases of the Arteries; Dr. J. Warburton Begbie, Diseases of the Veins; Dr. Sanderson, Diseases of the Lymphatic System; Dr. Murchison, Diseases of the Liver; Dr. Sieveking, Diseases of the Spleen; Dr. Murchison has contributed the articles on Diseases of the Kidneys; and finally, the articles on Hydrophobia and Tetanus are from the pen of Dr. W. W. Gull and Dr. Ansell. We have given an unusually extended notice to this work, because we consider it to be a most important contribution to medical literature, and one which we trust will be found in the study of every practitioner. Those who have been interested in the appearance of the "System of Medicine," and to whom we have grumbled so much at the delay in publishing the work, will, we feel sure, now forgive us, and the Editor had to bear the whole brunt of our many complaints. When we say that the materials contained in the three goodly pages of large octavo, which may be termed the index to the matter of the work, do not occupy a very large proportion of this volume would really be out of place in the very limited space at our disposal, and we can therefore do little more than indicate our general opinion of the book. The articles, it must be admitted, are of unequal value. Some of them, such as those of the Editor, and of many of his *collaborateurs*, are of the highest value, both as well written, clearly arranged, and lucid expositions of the subject treated upon, and as elaborate stores from which the student desirous of reference may obtain a knowledge of all that has recently been achieved in the particular branch of knowledge in question. Others, though excellent in style and clearness of plan, are, we regret to think, very little more than may be found in treatises older than the "System of Medicine." Again, there are one or two contributions which are not that can be desired in point of facts and knowledge they display, but in which the material has been so very badly arranged, that to read them is a positively painful work. Take, for instance, Dr. Wilson Fox's article on Diseases of the Stomach; it is a contribution which, so far as its facts are concerned, is everything that could be desired, and which contains a series of elaborate foot notes to each page, which is after all a bad mode of imparting knowledge to the busy practitioner. But this article is really so difficult to read with anything approaching to profit, that we fear many will "skip" it altogether, and thus do the author an injustice. This is simply because its style is so diffuse, and its grammatical construction of sentences very peculiar. Who, for instance, on first perusal, can form any satisfactory idea from the following sentence which opens Dr. Fox's contribution?—"The disturbances in *its* physiological functions, which characterise disorders of the stomach, present but few characteristic features, by means of which those arising from other than organic diseases can be distinguished from those depending on anatomical alterations in its coats." Very different are the articles by Anstie on Alcoholism, or Radcliffe on Cholera, which are not only masterpieces as scientific essays, but are admirable specimens of clear, forcible, terse English composition. The most novel contribution in the volume is that by Mr. J. Netten Radcliffe on that strange Epidemic Cerebro-Spinal Meningitis. This should be carefully read by those who have any experience of this singular affection. We have very perfectly endorsed its conclusions, and can only say, in conclusion, that we trust our readers will be equally honest, and will draw their opinions from an examination of a book which cannot fail to be for years to come the book of books on practical and scientific medicine.

"On Diseases of the Chest." By A. T. H. Waters, M.D., F.R.C.P. London: Churchill. 1868.

Dr. Waters is a well known and experienced provincial physician, and in the work under notice he comes forward as a perfectly independent observer, regardless of the doctrines on the subject of which he has formed in the course of a life spent almost at the bed-side. In addition to his position as a practical physician, Dr. Waters is known as a careful investigator of the minute structure of the lung, and therefore particularly qualified to lecture on Diseases of the Chest. We have carefully read the lectures before us, and we must confess our disappointment. The author gives us a number of illustrations of healthy and diseased lung structure; but, really, if we are to judge of his claims of a scientific observer on these specimens of his handiwork, our verdict would certainly be unfavorable. In none of the sketches is the magnifying power stated, and in all there is a roughness and want of regard for minute detail which, if they really indicate the author's microscopical observation, are very little to his credit. Passing over, therefore, the histological part of Dr. Waters's work, which, before us, does not show what his labors in the more purely practical division are. In this department we must accord the author our full and entire praise. He has given a very admirable history of the early symptoms, progress, and treatment of lung affections, and the [illegible] measures are fairly warranted by his experience of these affections. [illegible] is a practical chemical commentary on a disease of common occurrence. In this the author proves that the generally-accepted [illegible] for while stimulants are most valuable in the later stages of the disease, in the earlier ones they are equally prejudicial. Dr. Waters's volume is sound and practical.

The Journal of Cutaneous Medicine. Edited by Erasmus Wilson, F.R.S., April, 1868. London: Churchill.

This periodical, which comes out quarterly, appeals in an especial manner to students of skin diseases, since its pages contain everything that is new, and something that is true, concerning dermal affections. The first article in the present number is a lecture by the Editor on the Pathology of the Skin. This is a paper of some importance, since it not only deals with the pathological anatomy of the skin, but it treats also of the methods of studying the pathological facts, so as to arrive at the soundest conclusions. "The Dermal Pathology of Hippocrates" is also from the Editor's pen, and is a most instructive summary, not less interesting to the classical student than the skin doctor. Dr. Morris's paper on Nutrition is a very lame argument in defence of the "germinal matter" doctrine. Dr. Beale's supporters are doing serious damage to his views. Dr. Purdon recommends the use of chromic acid in skin diseases by starts, in a somewhat Hibernian fashion, by telling us that it "cannot be brought into contact with organic matter." Dr. Morris Wilson has a good paper on Eczema, in which he urges the employment of sedatives to relieve the irritation which is so prominent a symptom.

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, April 23rd, 1868.

The most interesting news-item of the month is the whispered announcement of a new monthly medical journal. As yet no prospectus or advertisement of the project has been issued; but, as I am in the secret, I can tell you something of it. The new periodical is to be called "The Practitioner: a Monthly Journal of Therapeutics." Its publishers are Messrs. Macmillan & Co., and its Editors Dr. F. A. Anstie, of Westminster Hospital, and Dr. Henry Lawson, of St. Mary's. Its projectors consider that too little attention has been given of late to the diagnosis of disease, and too little to its treatment, and they propose to inaugurate a new era in the history of modern medicine "The Practitioner" is to contain original articles on purely therapeutical questions by some of the first London physicians; it is to embrace reviews of all the important books, English and Foreign; is to supply for the benefit of the general practitioner a summary of the current views on therapeutics in the London hospitals; to contain extracts from continental journals; "notes and queries," and, finally, a bibliographical list for the month. The Editors are already quite full for the first issue, which is to appear in July.

The election of a President to the College of Physicians has come off, and, contrary to the expectations of some who even published their valuations in the medical journals, Dr. Alderson has been re-elected. It is, nevertheless, true that a very strong feeling exists against Dr. Alderson for his supposed depreciation of the labors and energy of some of the rising young Fellows, whose respect for conservative notions is not of the highest order.

A great deal of discussion is taking place relative to the ad-

vantages of protoxide of nitrogen as an anæsthetic. This gas,—laughing-gas,—known for so many years, and tried so often for the purpose of producing anæsthesia, has, thanks to the Editor of the medical journal, been creating quite a furore here. The method of employing it is different from that which used to be employed on former occasions. The patient is compelled to breathe the gas, and it only, and the consequence of this is said to be the absence of anything like delirium. It must not be denied that, in a great many instances, small operations, such as tooth-drawing, abscess-opening, tendon-cutting, and so forth, have been performed under its influence without pain to the patient; but there is one serious objection to its use, *viz.*, that it tends to produce asphyxia. In almost every case the face and skin, after a few inspirations, become completely livid. This has led most of our scientific men, experienced in the science of anæsthetics, (Dr. B. W. Richardson to wit,) to very gravely condemn its use. Mr. Paget, who has employed it in one or two cases, thinks that this lividity is a serious symptom, and that nothing can be said of its efficiency until observations have been made on several thousand cases.

The visit of the Prince and Princess of Wales to Ireland seems to have passed off very successfully, but we have not learnt whether any of the expected Knighthoods or Baronetcies have been conferred. The Dublin Medical Press warmly urged Mr. Adams' claims to recognition at the royal hands, but we have not heard that the distinguished President of the Irish College of Surgeons, and Surgeon in Ordinary to the Queen, has received the laurels which his countrymen were anxious to see conferred upon him. The royal party appears to have displayed an excess of enthusiasm in all that related to Cardinal Cullen and the Catholic University. But we believe that the Queen's University, an institution especially connected with the State, and established for the last eighteen years, was not taken any notice of. This appears to me to have been a little unfair, and can only be explained, I think, upon the ground of political expediency. The Queen's University now numbers nearly 1,000 graduates, while the Catholic Institution has none at all. *A propos* of the Queen's University, I may mention that the vacancy in the Senate caused by the death of the Earl of Rosse has been filled by the election of Dr. William MacCormac, of Belfast, a distinguished graduate, who is not only a scholar and physician, but is keenly interested in all that relates to Irish secular education. I may also mention that the petition of the University praying for representation in Parliament will very soon be laid before the House. It is already most numerously signed.

I am glad to be able to contradict a report set afloat here by one of the medical journals, to the effect that Professor Huxley had resigned his Hunterian Professorship at the College of Surgeons. It is absolutely untrue. Professor Huxley has not been very well lately, and he went out of town to Wales for change of air. Hence doubtless the rumour, unless, indeed, the thought was fathered by the wish of some ill-disposed aspirant for the professor's gown.

The *British Medical Journal*, "seduced of" some jealous young chemist, is striving to drag Professor Frankland into a newspaper controversy on the subject of his recent discovery of an elaborate process of water-analysis. Dr. Frankland's colleague, Dr. Odling, has written an amusing letter to the journal, in which, after mildly chaffing the Editor for his assumption of a power of criticism which he (Dr. Odling) evidently denies to him, expresses his regret that he has not been lucky enough to meet with the approval of the Editor of the *British Medical Journal*. I think it will be admitted by impartial critics that the journal has displayed bad taste, and worse judgment, in allowing itself to be led away to gratify the malicious pique of some partizan.

Connected to some extent with this question of water-analysis is the problem of the distribution of cholera by water. This is exciting a good deal of debate at some of our societies. Dr. Letheby, a chemist of some note, stands almost alone in contending that water has nothing to do with the transmission and distribution of cholera. Mr. Netten Radcliffe, on the other hand, who holds strongly to the water theory, and who has published a most elaborate Report in the last Report of the Privy Council, has nearly the whole profession on his side. At a recent meeting of the "Association of Medical Officers for Health," the matter was talked out rather fully; and from a careful examination of the report, I am bound to confess that Mr. Netten Radcliffe had much the best of the argument.

The recent death of one or two of the prisoners at Coldbath-field Prison has once more opened up the question of the general treatment and punishment of criminals. There can be little doubt, from the evidence on the trials, that one at least of the prisoners met his death through phthisis brought on by starvation and over-work. It would seem that this sad result might have been avoided by a more vigilant exercise of power on the part of the Medical Superintendent. It is true that the victim in this case was most refractory, but then it ought to be borne in mind that, whether a prisoner be violent or not, his work and food should stand in a direct ratio, and not in an inverse one, as the authorities at Coldbath-fields seem to have considered.

The case of Dr. Stirling, who was lately sent home from the Cape by Commodore Randolph, has received the attention of the Press, and doubtless the result will be the reinstatement of this ill-used gentleman. The facts which have come to light show that the doctor was right, and the naval officer egregiously wrong. The Commodore had some sharp altercation with Dr. Stirling, because he was late in visiting a gouty officer, who should have been in hospital, and to attend to whom, under the circumstances, was a special act of courtesy on Dr. Stirling's part. Yet for this squabble he was sent off the station. Had he been simply a naval assistant surgeon, he might have demanded a court martial; but even this wretched resource was cut off. Really these cases are becoming much too frequent.

Mr. Sampson Gamgee is fighting in the Birmingham papers for the abolition of all unpaid medical services, and Birmingham is the cradle of reform.

It is not yet known on whom the honor of Principalship of the Edinburgh University will fall, but strenuous efforts are being made to obtain it for Sir James Simpson. Few more worthy, or better qualified candidates could be found.

The Progress of the Medical and Collateral Sciences.

The Physiology of the Spinal Cord.—In a memoir sent in to the Belgian Academy of Sciences, M. Masius, of Liége, describes the results of some experiments which he recently conducted upon dogs, and which seem to prove that the spinal cord possesses a motor centre which has not hitherto been recognized by anatomists. This new centre, to which M. Masius gives the name of ano-spinal, is situate in the lower part of the lumbar portion of the cord, and presides over the tonicity and reflex contraction of the *sphincter ani* muscle. Of the importance of M. Masius's labors, we have the testimony of the Commissioners who examined his memoir. One of these, however, M. Poelman, questions the soundness of the author's conclusions, which he says are opposed to the well-known pathological fact that the *sphincter ani* does not always lose its power of contraction when the spinal cord is injured. M. Schwann, the originator of the cell-theory, thus pronounces his opinion on the subject. The experiments of the author prove incontestably that in dogs there exists, in the spinal cord, at the level of the intervertebral disc between the 6th and 7th lumbar vertebra, a clearly defined nervous centre which presides over the reflex movements of the *sphincter ani*, and that the centre which presides over the tonicity of that muscle is found in a similar position. But to assume the identity of these two centres would be unjustifiable on the evidence. M. Schwann suggests that further experiments should be made before definitive conclusions are drawn.

Grave Uterine Retroflexion.—M. Richelot applies the term "grave" to those cases which have been rebellious to all the usual methods of treatment, and which are associated with intense pain, which is either spontaneous, or is the consequence of fatigue. His mode of treatment consists in bringing about structural union between the neck of the uterus and the wall of the vagina. He states that this plan is easily carried out by the application of caustics, and that it is neither obstructive to conception nor to parturition.

Formation of Fat from Albumen.—Physiological chemistry in these days teaches us doctrines very different from those of a quarter of a century since. At that time we were taught to imagine that fats in the animal body could only be derived from

from this liquid.

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contains a very curious paper by M. Houdin on certain optical what M Houdin has been investigating is the character of this flash when the pressure, instead of being sudden, as in the case referred to, is gradual. On waking early in the morning, and before daylight, he presses his fingers upon his eye-ball, and then carefully watches the effects. The first effect is the production of a number of soft luminous nebulæ of blue and yellow, accompanied by undefined luminous figures, which change in a sort of kaleidoscopic manner. In about ten or fifteen seconds a series of bright sparks appear to pass across the visual plane. Fifteen seconds later these disappear, and give rise to a brilliant appearance of phosphorescence. This phosphorescence takes spot of a more or less distinct ovoid character. Finally, the halo all the appearance of sparks, &c., is caused by pressure on the delicate retinal vessels, which interrupts their circulation. The halo is caused, he concludes, by the pressure exerted upon the

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The production of the sexes.—In time, from time to time, how some of our old physiological landmarks are removed by persevering research. One of the most striking statements contained in our physiological text-books was that in which it was alleged, as one of the grave influences of food, that the sexes of bees depended upon the food supplied by nurses to the larvæ, and that a queen or female bee was actually manufactured by being supplied with a peculiar form of diet. This fact is no longer a fact, at least if the recent researches of M. Andre Sanson be correct. At the meeting of the French Academy on the 13th of April, M. Sanson presented an important paper, in sexes can be easily distinguished in the eggs shortly after the latter have been laid. M. Sanson thus corroborates the opinion of old Hubert, one of the most careful and conscientious observers some bees' eggs, whose characters seemed to support his state-

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A still greater antiquity for man than that believed in is assigned by M M. Garrigon and Filhol in a memoir recently published, though written in 1864. Not content with allotting thousand years, they contend that man was a contemporary of the animals of the *Miocene* period. In the deposits of this formation at Sansan, these geologists assert that they have found numerous bones split along their length in such a manner as to indicate the former presence of man who had split the bones, as do many modern savages, to extract the marrow from them. They further state that, in the Miocene rocks of Beance, they have also found flint-weapons, which were unquestionably chiselled out by human hands, and are not mere "freaks of nature." What an almost interminable controversy

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does not condescend to meet his adversaries on the open arena of argument; but contents himself with launching ridicule upon those who differ from him in opinion. In the number of this journal for April, the Editor, having alluded to Dr Salisbury's makes the following observation:—"The last absurdity in the way of fungi comes to us from America, and the sons of Hunter have announced to them, in hideous Greek, heard of vegetations and cauliflower excrescences, but those are not the vegetables in question, but a fungus of surpassing beauty: one the denizen of the cellular tissue of the ulcerous chancre; the other the inmate of the epithelial cell of gonorrhœa. Contagion is a mere matter of the implantation of sporules or seeds. How dull we have been all these years. We may soon be taught to comprehend how syphilis may be caught in the atmosphere of a ball-room from floating organic linen in a washing tub." So on, *ad nauseam*. Surely Mr. Wilson cannot imagine that mere ravings of this kind can have any weight with rational men. Indeed, his remarks, if they have any force, tend to show the absence of any argument on his own side. It is quite fair to be as sceptical as he pleases, but the attitude assumed in the preceding passages is neither formidable nor dignified.

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is prepared by spreading washed and finely powdered sulphur thinly on the bottom of a wooden box or other closed chamber, absorbed.

Termination of the nerves in the Tongue.—Selecting the tongue of the frog as a favorable object for examination, Herr Engelmann has been studying the mode of termination of the nerve fibres. He has published the results of his enquiries finds that the fungiform papillæ contain their separate forms and *furcate cells*. The first are most external, and are also the largest; the second are slender bodies, extending from "the deeper layer of the epithelium to the surface, passing between the interstices of the larger cells." Between the two are situate the third or forked cells. The author alleges that when the branch of the gustatory nerve enters the papilla, it divides and sub-divides, and the ultimate filaments terminate in a sort of expansion, on which the central processes of the cylinder and furcate cells rest. Beyond this, however, he does not seem to have made out much towards clearing up the problem of the termination of the nerves.

The Ciliary Muscle.—In *Max Schultze's Archiv für Mikroscop. Anat.*, Part IV, 1867, Herr F. E. Schultze publishes a paper on the ciliary muscle, in which he attempts to prove Helmholz's theory of the accommodation power of the eye. Neither his theory nor his facts are new, and moreover, he seems to confound Helmholz's opinions with those of other physicists. He considers that the accommodation is affected by the congestion of the vessels caused by the contraction of the muscle on the vessels. But this theory was long ago put forward by Dr. S Fleming, of Edinburgh, and we then disproved it. Again, if we mistake not, both Helmholz and Donders would assign a muscular power to the crystalline lens, by which it should be able to alter its own form. In our opinion, a larger series of experiments is wanting to complete our knowledge of this important physiological point.

ORIGINAL COMMUNICATIONS.

ON CHOLERA. No. II.

By C. Macnamara,

Surgeon to the Calcutta Ophthalmic Hospital.

CORRIGENDUM.

First paragraph of former paper, read "98°" for "90°."

Early in March, 1817, a death from cholera occurred in Fort William, but, being an isolated case, no particular notice was taken of it. About the 11th of July we hear of the simultaneous outbreak of cholera in the districts of Patna, Mymensing, and Sylhet;* the former situated to the extreme west, and the latter to the east of the Province of Bengal. In August and the following months Calcutta was affected, 25,000 of its inhabitants having been under medical treatment for the disease. Of these 4,000 died; but it is worthy of notice that scarcely a case of cholera occurred among several thousand prisoners confined in the Allipore Jail.

Copies of some of the original reports, from which these details have been compiled, are still preserved among the M. S. Proceedings of the Bengal Medical Board, and are well worth studying; but they do not appear among the Office records in the order above indicated, no special reports on cholera having been called for, or received by the Board until the end of the year.

The Proceedings of the Medical Board, to which I shall frequently have to refer, consist of a series of day books in which entries have been made regarding the current work of the Office. These records are particularly valuable, therefore, in tracing the history of a disease such as we are now considering, because they give us the opinions entertained by the members of the Board at the time the events brought to their notice actually occurred,—ideas which might very probably have undergone considerable modification if recorded at a subsequent period, and reviewed by the light of further experience or knowledge of the matter in hand. This fact is well illustrated in reference to the correspondence regarding the outbreak of the cholera of 1817.

The first notice in "the Proceedings" of this epidemic is in a letter from Dr. Tytler, Civil Surgeon of Jessore, to the Judge of the district, dated August 23rd, 1817. He writes:—"An epidemic has broken out in the bazar, the disorder commencing with pain or uneasiness in different parts of the body, presently succeeded by giddiness of the head, sickness, vomiting, griping in the belly, and frequent stools. The countenance exhibits much anxiety, the body becomes emaciated, the pulse rapidly sinks, and the patient, if not speedily relieved with large doses of calomel, followed by one of opium, it carries him off within four and twenty hours."† As the disease was spreading rapidly, and the natives were panic-stricken, and rushing from the town, the Judge thought it advisable to close his Court, and immediately reported the circumstance to the Supreme Government, enclosing a copy of Dr. Tytler's letter. Upon receiving this communication, Mr. W. B. Bayley, the Secretary to Government, forwarded it to the Medical Board, urging them to give the matter their immediate attention, and to advise the Government on the subject. In their reply (the 6th of September, 1817,) the members of the Board remark "that the disease is the usual epidemic of this period of the year, increased perhaps in violence by the peculiarities of the present season, and not improbably by certain local causes affecting the health of the inhabitants of Jessore. It is understood that in certain quarters of Calcutta a similar epidemic prevails; and it is probable that there is no considerable town in the low and humid climate of Bengal that is at present entirely exempt from its operation. The obstruction to ventilation in native towns from rank and luxuriant vegetation powerfully aids the influence of the season, and as this cause may operate in a greater or less degree in different places, the prevalence and fatality of the epidemic will probably be increased or diminished.

"A great alarm seems to have spread itself among the natives of Jessore, which the suspension of public business by the Magistrate would not be calculated to check, though there is no doubt, however, that apprehension may aid as well the diffusion as violence of an epidemic; yet it is probable that the consequences arising from that cause may in the present instance have been beneficial, correcting the influence of an overcrowded population." I have quoted this letter at length, because it appears to me, not only an important document as bearing upon the history of cholera, but it also gives us an idea of the recognised views of the etiology of the disease held by medical authorities in India in 1817.

It will be observed that the members of the Board, who had probably served in this country some twenty years prior to the date of their letter, remark that the disease *is the usual epidemic of the season*. We may conclude, therefore, they were perfectly familiar with its phenomena; but throughout the original correspondence, neither the Government, the Medical Board, nor Dr. Tytler mention the epidemic as cholera. Curiously enough, the first notice we have of this fact is in a letter from the Magistrate of Calcutta forwarded to Government on the 16th of September, 1817. He observes that "a disease is prevalent in the town and suburbs of the species of cholera morbus." This statement having been sent on to the Medical Board, they declare the disease to be cholera morbus, and that "it generally prevails to a greater or less degree at the present season of the year. It has, however, of late been far more fatal than at any former period within the recollection of the oldest inhabitants, running a course generally in a few hours, and sometimes in a few minutes,"‡ phenomena which, nevertheless, had been ascribed to it, a century before, by the Portuguese at Goa, and in other localities.

I have already noticed the existence of cholera at Patna and Mymensing in July, 1817, and in Calcutta early in August. At this time it also appeared at Dacca and Naraingunge. On the 23rd of the month it was raging throughout Jessore, and in Chittagong, on the eastern side of the Bay of Bengal;† at the same moment it appeared in Rajshahye, a central district lying east of the Ganges, and afterwards in the high and distant tracts of Bhaugulpore and Monghyr. By the middle of September the inhabitants of Purneah, Dinagepore, Balasore, and Cuttack were affected. On the 17th it had spread to Buxar, Chuprah, Ghazeepore, and, towards the end of the month, to Mozufferpore.‡

In October the districts of Bauleah, Berhampore, and Rungpore came under the influence of cholera; and, in fact, within three months from its appearance, the disease had been generated throughout the Province of Bengal, including some 195,935 square miles, and within this vast area the inhabitants of hardly a single village or town had escaped its deadly influence. There were some remarkable exceptions to this rule; as, for instance, in the enormous city of Moorshedabad, which appears, upon good authority, to have been entirely free from the disease

* Report on the Epidemic Cholera Morbus as it visited the Territories subject to the Presidency of Bengal in 1817, 1818, 1819, by T. James, M.D., page 5, Calcutta, 1820.

† M. S. Proceedings of the Bengal Medical Board for 1817.

‡ M. S. Proceedings of the Bengal Medical Board, for 1817.

† The Native Doctor, writing from Chittagong, says: "The disease has been prevailing in this district for the last month, and has carried off many thousands of the inhabitants."

‡ Journal, vol. 5, p. 11.

during the year 1817. [illegible] prevailed [illegible] Mr. [illegible] remarks that nothing [illegible] was received [illegible] Bengal. [illegible] [illegible] [illegible]

affirmed that the previous healthy villages around the camp got infected from the diseased army.*

Mr. Jameson traces the cholera on as far as Saharunpore, where, he says, the "high ridge of mountains, which in other quarters proved hostile to its propagation, here opposed its further progress, and saved the inhabitants of the hilly district from a scourge which, in their circumstances of poverty and nakedness, would probably have proved exceedingly fatal to them." This inference was of course drawn from the information at Mr. Jameson's command when he wrote his report; but it is to be observed that eighteen months later (in May, 1820), Moorcroft incidentally mentions the existence of cholera of a virulent type at Amb and Sungunpore to the north-west of Lahore,† which in all probability was a continuation of the invading cholera we have been tracing from Bundlecund into the North-Western Provinces of India and the Punjab, for Sir Richard Temple informs us that the Punjab was visited severely by the disease in the year 1820.‡

From Bundlecund the cholera invaded the districts of Saugor and Nagpore during the months of April and May, 1818, and may be traced westward to Bhilsa, Bhopal, and Ongeen, which it reached on the 9th of May. In June it appeared at Kotab, but does not appear to have crossed the Aravulli mountains. The epidemic extended from east to west along the valley of the Nerbudda and Tapty rivers. We find it early in April at Mundela, Hoshungabad, and Mooltan. On the 15th of May it was at Nagpore. In this quarter, it, as usual, gave evidence of its capricious nature; "it was not met with between Nagpore and Mooltan, a distance of 70 miles, and Bantool, a large town in the direct road from the river to Mooltan, was entirely exempt from its visitation."§ On the 3rd of July the disease was in full force at Jaulum. "In the Province of Candeish, where there is not sufficient population, and but little intercourse between the villages, its progress was slow; it appeared in the capital of the district in the middle of July, and at the end of August at Surat." Dr. Kennedy says the disease was imported from the former to the latter place by a body of prisoners. "At Punderpoor, to the south of Bombay, it happened to break out at the time of the great jatra, and was spread at once in all directions by the pilgrims returning to their homes. The poison would seem to have been more concentrated there from there being so many sources of production; the number of deaths in a few days was estimated at 3,000, and the patients were described as having been knocked down dead as if by lightning."‖ After visiting Aurungabad, Amednuggur, and Nassick, it reached Seroor on the 18th of July, and towards the end of the month it appeared at Poona. "On the 6th of August it broke out with great violence at Panwell, a considerable village on the main line of communication between Poona and Bombay, separated from the latter by an arm of the sea, and distant fifteen or twenty miles, but between which a pretty constant communication is kept up by means of boats. On the 9th or 10th of the same month the first case appeared on the Island of Bombay, and could be traced to a man who had arrived from Panwell the same day; it also spread north and south along the sea coast from the same place, and was imported to a village in the neighbourhood of Tannah, on the Island of Salsett, distant from Bombay about twenty miles, by a detachment of troops that escorted a State prisoner to that garrison from Panwell. The disease did not break out at Maleni on the extremity of the island, distant only five or six miles from the principal native town of Bombay, until it had been established in the latter; it then gradually spread over the Island of Salsett, through which the road from Bombay to Surat and the northern countries lies, and by which, during the south-west monsoon, is the principal line of communication."*

It will be observed that the cholera had extended itself steadily from east to west through the Presidency of Bombay; and Dr. Jukes remarks in July, 1818:—"It was hoped here (in Bombay) that as the disease had for some months been moving gradually south-west, borne along, as it were, by the north-east monsoon, that it might be checked by the violent south-west gales which blew on our Coast during that season," † In spite, however, of these opposing storms, the cholera marched forward, and having arrived at the Coast, spread through the Concan.

The following is a valuable record as affording us an idea of the mortality and number of cases of cholera which occurred among the civil population of the Island of Bombay during the year 1818:—‡

Abstract of Cases.

1818.	Cases.	Deaths.	Police.
August ..	4,400	.. 256	.. 409
September, ..	4,804	.. 287	.. 478
October ..	2,411	.. 146	.. 181
November ..	824	.. 44	.. 29
December ..	806	.. 64	.. 72
1819.			
January ..	889	.. 144	.. 125
February ..	517	.. 27	.. ..
	14,651	938	1,294

Proportion of deaths in these cases when medicine was administered, 6·4 per cent. The population of the island may amount to between 200 and 220,000, say 210,000. The number of ascertained cases, 15,945, which gives the proportion of attacks of the disease for the population 7½ per cent.

We must now return to Nagpore, where, as already observed, cholera had made its appearance among the inhabitants of the city and neighbouring villages in May.

Throughout the early part of the year 1818, a considerable body of Bengal and Madras troops had been engaged in the siege of Chundah, a town situated some seventy miles south of Nagpore. The men employed in the arduous operations of this siege escaped the cholera, notwithstanding the excessive heat and many privations they had to undergo. Their work having been accomplished, they were ordered to March to Nagpore, and on the 30th of May arrived at Gaongong, a village nine miles south of the city. "Here they had hardly learnt that the epidemic was raging in the vicinity, when they began themselves to experience its unwelcome visits. As usual, its first assaults were most severe. Many of those attacked, whilst loitering for water in the neighbouring rivulets, were brought in expiring; some dead. Of seventy cases admitted during that night and the succeeding day, about twenty died. On the 31st the instances of attack were equally numerous; but in these the exhaustion was not so sudden, and the subsequent symptoms were less severe. On the 1st of June, the division moved from Nagpore towards the Cantonments of Hoshungabad. The disease then gradually declined, and almost entirely disappeared on the 17th and 18th after some seasonable falls of rain."§

Early in June the cholera had reached Hingunghat, fifty miles to the south of Nagpore, and a few days later it spread to Chundah. The disease first appeared at Julnah on the 3rd of

* Jameson's Report, page 149.

† Travels in the Himmalayan Provinces of Hindustan and the Punjab, from 1820 to 1825; by W. Moorcroft, London.

‡ The Localities in India exempt from Cholera; by Surgeon Edward Balfour, p. 7, Madras, 1856.

§ Jameson's Report.

‖ Report on the Epidemic Cholera of 1818. Published under authority of the Government of Bombay, 1819, p. 151.

* Bombay Cholera Report, page 9.

† Bombay Cholera Report, page 171.

‡ Bombay Cholera Report, page 13, Appendix.

§ Jameson's Report, p. 23.

while the horse artillery men, who were a considerable way in

that period. When it appeared in a family, several individuals

broke out at Hyderabad towards the end of July, and at Gooty

but had declined in severity towards the beginning of October. About the 20th of that month it again attacked, with its former violence, the troops and inhabitants of that town, and did not disappear till November. "Of five hundred persons in the jail,

about twelve hundred yards eastward of the fort, where the

The epidemic appeared at Hurryhur and Chittledroog in the middle of September, and at Bangalore on the 22nd of October. On the 6th of November it broke out at Seringapatam, which

tants was very great indeed.

EXPERIMENTS ON THE ACTION OF THE COBRA POISON.

By J. [illegible], M.D., F.R.C.S.E.,

[illegible]

Fourth series.

EXPERIMENT No. 1.

[illegible] cobra was

by the poison, and was perfectly well, vigorous, and active on the

EXPERIMENT No. 2.

At 3-30 p. m. a full-grown, fresh cobra of light brown color, with one ocellus on the hood, was made to bite a large Rana Tigrina (Bullfrog) on the inner side of the thigh, the integu-

close his jaws on, and under the fangs in the muscle, retaining them there for some time.

moves about as usual.

almost paralysed.

the hind legs are irritated. The legs are drawn up.

4-30.—Reflex movements have ceased.

4-45.—Dead. Body much swollen and distended with air.

EXPERIMENT No. 3.

A full-grown, active Ptyas Mucosus (*Dhamin*) was bitten at 3-36 p. m. in the mouth by a powerful, vigorous, and fresh cobra. The snakes were made to close their jaws on each other. The snake remained unaffected, and on the 11th, at 2 p. m., was quite well. There could be no doubt that the cobra's fangs were deeply inserted in this case.

EXPERIMENT No. 4.

A [illegible] was bitten, at 3-55 p. m., by a full-grown, fresh, and vigorous cobra of the light colored variety, with one ocellus, which the Natives of Bengal call "Keowtie," in the mouth and in the thigh, the

3-57.—The bitten leg is dragged as though paralysed; the mouth is bleeding from the cobra's bite.

4-25 p. m.—Drags the leg; is rather sluggish, but not much

great difficulty.

4-35.—Apparently paralysed; can be moved with difficulty.

though still sluggish. On the 11th June, at 2 p. m., I found noon.

EXPERIMENT No. 5.

At 4 p. m., a half-grown fowl was inoculated in the muscular part of the thigh with four drops of cobra poison removed from the snake the day before. The poison was injected with the ordinary hypodermic syringe. The effect was almost instantaneous. The fowl staggered when placed on the ground; would appear to show that the poison loses very little of its power, if any, by removal; and that its action depends much on the instrument with which it is injected. The hypodermic needle resembles the cobra's fang, and was almost as rapid in inducing the full effect of the poison.

EXPERIMENT No. 6.

At 4-7 p. m., a very large Rana Tigrina was injected with

[illegible]

used for the fowl. The axilla and the abdominal wall were the places selected for injection.

4-22.—Slightly convulsed, and then partially paralysed.

4-30.—Almost motionless; respiratory movements still apparent. 4-35.—Dead.

4-20.—He is beginning to be sluggish, but is very slightly affected.

This experiment points to the difference of the effect of the poison on cold and warm-blooded animals. With three times the amount of the poison as was used in the case of the fowl, it took seven times as long to kill the frog.

EXPERIMENT No. 7.

One drop of carbolic acid was administered to a full-grown, vigorous cobra at 4-14 p. m. In two minutes the snake was in convulsions, and powerless to strike, or even erect his hood.

4-34.—Still struggling; convulsed; mouth open, but unable to move or strike.

4-45.—Has gradually been recovering; looks still very weak, and the head trembles, and can be raised with difficulty. At 2 p. m. the following day the snake had recovered, but still seemed weak, and unable to dilate his hood perfectly.

A smaller cobra to which the same quantity, one drop, was administered, died in less than five minutes.

EXPERIMENT No. 8.

Two drops of carbolic acid were administered to a large frog, Rana Tigrina, at 4-15 p. m.

4-20 p. m.—Apparently not affected.

4-22.—Began to be sluggish.

4-24.—Very sluggish; reflex movements when the hind legs are irritated.

4-30.—No reflex movement; lies almost paralysed; respiratory movements ging on slowly.

4-40.—Quite dead.

When dead, the body became quite collapsed and pinched in, whilst the frog killed by cobra poison was much distended.

The poison used for inoculating on this occasion had been taken from three cobras the day before. There was altogether about forty or fifty drops. It is a slightly viscid, somewhat opalescent fluid; clear when pressed out of the poison gland, but becoming slightly turbid afterwards, with a slightly acid reaction, and under the microscope presenting the appearance in the annexed sketch,* which I observed after very careful examination.

This poison used on the day after its abstraction had lost very little of its virulence; for, when injected through the hypodermic needle, it caused death very rapidly. Where it has appeared to fail, the apparent failure has probably been due to the mode of insertion. The hypodermic syringe is very like the poison fang, and it appeared to inject the poison just as efficaciously.

I may note that the experiments with cobras have been made with three varieties of the "Naga Tupudiana." They vary in color from black or prismatic dark-purple to a light brown or ash color. The snake-catchers describe three kinds: the [illegible] marked on the hood with spectacles; the [illegible] [illegible] on the hood with two ocelli, and generally of a light color; the *Kalasamp* or the black cobra.

The Pungatus Russellii they call *Sankni*.

The Daboia Russellii is called by them the *Bora*, and is regarded as a very poisonous snake. As yet I have had no opportunity of trying any experiments with this snake.

June 9th, 1868.

* [illegible] [illegible] are proposed.—Ed. *J. M. S.*

ON FATTY DEGENERATION.

By CHARLES R. FRANCIS, M.B.

Of all the morbid degenerations of the tissues in the human frame, there is probably none of such frequent occurrence, in this country, as *fatty degeneration*; no abnormal pathological condition which is so constantly the cause of death, and especially of sudden death, as this. The fact is well known to all who have treated diseases in old residents, and more particularly in those who have been grass feeders, and intemperate worshippers of Bacchus. The physician, and especially the surgeon in charge of a European regiment, are familiar with it. It is a frequent cause of death too in comparatively young subjects—of young men who have lived but a short time in the country.

This form of degeneration has attracted considerable attention in Europe during the past quarter of a century,* and, as generally, when affecting the heart, defying the keenest investigation that can be brought to bear for its detection, has come to be regarded by the operating surgeon as his most formidable, because usually concealed, foe. There are indeed occasionally certain indications of this degeneration having taken place, such as an intermittent pulse, a feeble circulation with cold surface and extremities, an inexplicable *malaise*, a feeling of lethargy, imperfect digestion, sleepless nights, or sleep disturbed by dreams, and other symptoms which point to a debilitated constitution. But all these symptoms, whether taken together or separately, may proceed from other causes; they are not pathognomonic of fatty degeneration. But if, in addition to them, we are told of attacks of occasional giddiness, stupor, loss of memory, numbness of either the right or left arm, difficult articulation, palpitation, "oppression in the heart," inability to walk up hill; and, moreover, if, in the same individual (in one who has not yet reached the period of life when it is ordinarily developed,) we find the *arcus senilis*, *then* the collected symptoms may be accepted as a sign of this particular form of degradation of tissue. In an able article in the XXIInd number of the *Edinburgh Journal of Medical Science*, Dr. Fayrer has shown with what frequency patients succumb, in Calcutta, to this condition (when it affects the heart) after an operation. I have myself repeatedly pointed out to the students in my class how constant a cause of sudden, and unexpected death, this degeneration of the *heart* is found to be in persons who come more immediately under the care of the physician. And, in an admirable and highly-philosophical paper by Dr. C. N. Macnamara, in the Xth number of the *Indian Annals of Medical Science*, it is shown what a remarkably high ratio mortality, in the European army in India, is attributable to it. Dr. Macnamara even believed that it led to the changing of the entire regiment to which he was attached, (the 1st Fusiliers) once in ten years.

The ordinary supposed causes of fatty degeneration are, generally, well known. Indulgence in a rich diet, and alcoholic liquors, indolent habits, decline of life, bygone inflammation, defective nutrition and excretion, and what has been called the [illegible] [illegible], are among the chief. Speaking of alcoholism as a cause, Handfield Jones says, in his exhaustive paper on the general subject of fatty degeneration, "the effects of spirit drinking * * illustrate extremely well the two principal conditions of the change. Impairment of excretory action, and pouring in of an hydro-carburet into the blood, cause it to be loaded with oil; while the debilitating action of the alcohol on the nervous system, and through it probably on all parts, lowers their vital energies, and at length so enfeebles their organic life, that they can no longer maintain their healthy construction." Handfield Jones speaks of impairment of excre-

* [illegible] [illegible] [illegible]

respiratory function should be in full play. Diminished

peculiarly interesting cause of fatty degeneration, resulting,

and efficient than in the winter, and, during the exposure of the system to even this amount of heat, carbon would accumulate, more or less, in the blood, were it not for the greater activity of

flow of bile. How much greater would be the tendency to this accumulation in the hot weather of a tropical climate!—in India,

excepting in Dr. C. N. Macnamara's treatise It has indeed

between diminished respiration from *diseased* lungs, and this degeneration of the tissues, but the fact of its resulting from

profession is much indebted to Dr. Norman Chevers for bringing the general subject into notice, in his masterly and most

health of European soldiers in India." That fatty degene-

body, and especially in the liver, in this country, is a fact which has been familiar to all who have made careful *post-mortem* examinations, in the large general Military and Civil hospitals

practitioners have only, within the last *few* years, discovered. The profession is indebted to Drs. Ormerod, Barlow, and Richard Quain for the light which they have thrown upon the subject. Fatty degeneration of the heart is now well understood, and accepted as a cause of sudden death in the British Isles. That its frequency is greater in India, proportionately, amongst the same population, *ceteris paribus*, *i. e.*, given the same number of gluttons and drunkards, I have no doubt. The blood of such persons is heavily laden with hydro-carburets, which, even if all their organs were healthy, the lungs, from their diminished activity, would be unable to burn off. Probably, when they first arrived in India, and for some time afterwards, the liver and skin

but, after a while, the former organ lost its integrity, being in all probability the first in the chain of organs to do so. It, doubtless, became the seat of fatty degeneration early in the history of "loss of vital energy and defective excretions." Other organs, the heart participating, followed either consecutively, or more or less simultaneously,—the habits of life continuing the

accumulations of hydro-carbon (fat) from the blood. In cases where fat had been distributed about, and amongst, the tissues only, giving rise to a comparatively harmless obesity, there would be little danger; but the actual transformation of tissue into fat could point only in one direction, *viz.*, an early, and probably a

The two most common causes of a speedy death in India are embolisms and fatty degenerations of the heart. The former, which is now well understood, give rise, however, rather to a

of life may occupy one or two days, but in this condition of the heart it hardly exceeds a few hours.

helped to bring about this general degeneration of tissue from the day on which the European first landed in India.

That there *is* diminished function of the lungs in a tropical

if abundance of exercise were taken, is open to question. But, except at the higher elevations in regions where a tropical heat prevails, the same amount is *not* taken that a cold climate would induce to. Therefore, as a matter of fact, in such a climate there *is* diminution of function. This fact admits of proof in a remarkable manner. It has been observed that the lungs of Europeans, who have been some little time in India, are lighter than the lungs of those who have remained in a cold climate. I was very much struck with the comparative lightness of the lungs in the bodies of such persons whom I examined, and weighed, in the course of my enquiries into the actual weight of these organs in patients who had died of cholera. I was testing the accuracy of Dr. Johnston's statement, (based upon that made by Dr. Parkes in his work on Asiatic Cholera), that the lungs, owing to spasm (!) of the pulmonary artery in that disease, were uniformly very much lighter in cholera than in health. Struck with the great reduction in weight, even when the lungs were congested, I instituted an enquiry into the *normal* weight of the lungs of Europeans in India; and I found that, almost in every case, the lungs weighed very little more than thirty oz.; whereas the normal weight, assigned by Reid and Clendinning, is from forty-two to forty five oz. The fact was confirmed by other observers. I mentioned it to Dr. Parkes, at Netley, a few weeks ago; and he said that he was quite prepared to believe it. He had suspected it himself when making his own investigations. The enquiry is yet in its infancy, however, and I shall be glad to know that others are pursuing it. The weight of *all* organs in this country, as well of Natives, as of Europeans acclimatized or recently arrived, should be systematically weighed. We have no standard weight, that I am aware of, of this kind for tropical countries. Interesting discoveries might be made, and considerable light thrown upon the pathology of disease. We have zealous workers scattered through the three presidencies, who only require to be told of channels for their energies. Will they take this as one? Large opportunities are offered at our general, college, charity, and jail, hospitals; fewer in regimental, garrison, and depôt, hospitals; but if all were indented upon, a vast stock of knowledge would be accumulated.

The frequency—the, I might say, awful frequency—with which patients, and even persons in apparent health, are struck down in this country, demands our earnest attention with a view to, if possible, diminishing it. That it *is in our power* to diminish it in a way (of which we have before perhaps thought but little) I am persuaded. What is the cause of the greater mortality amongst the European soldiers in India than amongst

Dr. Macnamara, *loco citato*. But why so? Because the former eats too much carbonaceous food, drinks too much spirits, and sleeps all day, and all night, if he can, in the hot weather, without taking sufficient exercise; and, even if he did, the temperature at this season keeps down the activity of the lungs. Whereas the officer, though he too

to the hills sometimes, where he burns all the extra carbon away. Here is another argument in *favor of locating European troops in the hills as* much as possible, *before* fatty degeneration has had *time* to set in.

Dr. H. C. Cuthbert, F.R.S., has been appointed Superintendent of the Government Press, and Chemical Examiner, N. W. P., during the absence, on deputation, of Dr. Walker.—*Pioneer.*

A SUGGESTION REGARDING POST-PARTUM HÆMORRHAGE.

BY A. R. HALL,
Assistant Surgeon, Royal Artillery.

IT has occurred to me that there is a possible cause of flooding during labor which has not been specially noticed by writers on midwifery. I allude to *the occasional tying of the umbilical cord before pulsation has ceased in it.* We are told, in works on Obstetrics, that if the child has cried or breathed, its communication with the mother is no longer necessary, and that the cord may be tied immediately. No notice is directed to be taken, whether the cord is pulsating or not. This proceeding involves perfect safety as regards the child; but may it not do harm to the mother?

Before considering what is the state of affairs directly after the expulsion of the child, let me quote some passages from a book by Dr. Lumley Earle, Obstetric Surgeon to the Queen's Hospital, Birmingham, entitled "Flooding after Delivery." At page 104, under the heading "Partial Separation of the not morbidly adherent placenta," he writes:—"After the birth of the infant, the uterus generally remains quiescent for a short time before it contracts to detach the placenta. Dr. Murphy has given to that condition of the uterus the very appropriate term of 'suspended action,' in contradistinction to that of true inertia. Now, a not uncommon cause of hæmorrhage is the *partial* detachment of the placenta before the uterus begins to contract. The only safeguards against flooding are either adhesion of the entire placenta, or firm contraction of the uterus, its cavity being perfectly empty. Both these points are wanting when hæmorrhage occurs from partial separation of the placenta during an uncontracted state of the uterus. The blood flows through the uterus unimpeded, and escapes out of the uterine sinuses lately covered by the detached portion of the placenta. The healthy afterbirth is so loosely connected to the uterine wall, that very slight disturbances may give rise to its partial detachment, *e.g.*, exertion of the patient; coughing; the application of strong or unequal pressure on the uterus during the absence of contraction; contraction of only a small portion of the uterus; and premature traction on the cord."

Now, as stated above, *a not uncommon cause of hæmorrhage is the partial detachment of the placenta before the uterus begins to contract.* What is the cause of this partial displacement? The uterus has not re-commenced to contract for the expulsion of the placenta. Its action is suspended. If the last contractions of the uterus to expel *the child* had produced it, blood would immediately begin to flow as soon as the child had entirely passed through the vulva. This sometimes does happen; but most of the cases of post-partum hæmorrhage met with occur after ligature of the cord; many of them almost directly after. If, then, the child has been born without any immediate flooding, and the uterus is quiet, what is the cause of the partial detachment of the placenta? I believe it may be explained as follows. Let us take an ordinary case of flooding. The child has been born; the blood is still circulating through the cord; the pulsations are distinctly felt; the child breathes, and a ligature is applied to the cord. What follows? The blood coming from the uterus into the placenta is suddenly stopped at the junction between the two; it cannot proceed, because of the blood in front having been brought to a stand-still by the ligature on the cord; *the healthy afterbirth is very loosely connected to the uterine wall, and very slight disturbances may give rise to its partial detachment.* Blood is, I assume, poured out between the uterus and placenta, because that is the weakest part that the blood comes in contact with, and will first yield to the pressure from behind. A partial detachment of the placenta takes place, and consequently hæmorrhage into the cavity of the uterus. Can it be then that too hasty or too early application of the ligature to the pulsating cord, and consequent sudden separation of the placental attachment, are the real causes of certain cases of post-partum hæmorrhage? Such may be regarded as merely a suggestion on my part; but if there is any truth in it, this cause of flooding can be so easily avoided, that I have thought it worth while to draw attention to it. As a rule, there is seldom any necessity for haste in the division of the umbilical cord. If the child has not begun to breathe, it requires the blood which is circulating through the cord; for although out of the uterus, it is still drawing lifhe from te mother. If it is necessary to try and excite respiration, cold water can be dashed on it, or other direct stimulants can be applied, without entailing any risk to either mother or child. If, on the other hand, the child *has* breathed, the pulsation in the cord will become less frequent, and cease in a short time; no blood will then be flowing into the placenta, and the ligature may be applied without any chance of doing harm.

Dr. Earle, in the above quoted work, devotes a chapter to the "Preventive Treatment," and his suggestions are most practical. But he makes no allusion to the state of the cord when the ligature is about to be applied, whether it is pulsating or not. I have therefore been induced to put certain thoughts which have occurred to me on paper. I bring forward the subject as one based, of necessity, on a theory; and in doing so, I am fully aware how fallacious theories sometimes prove.

Still, as it has not been treated of in our standard works on Midwifery, these remarks may have the effect of drawing the attention of medical men to the subject; and if, as a rule, a ligature were not applied on the umbilical cord whilst it is pulsating, it is possible that cases of post-partum hæmorrhage might be less frequent than they now are.

BARRACKPORE, *May 18th*, 1868.

CASES FROM PRACTICE.

COMPOUND COMMINUTED GUN-SHOT FRACTURE OF BOTH BONES OF THE FOREARM; SECONDARY AMPUTATION; RECOVERY.

BY CHARLES MARTIN RUSSELL, M.D.,
Superintendent of Pilgrim Hospital, and Civil Surgeon, Gya.

CHAMMAN, aged 55, Hindu by caste, and occupation teli, of Mouzah Tailhutta, Pergunnah Roh, in the sub-division of Nawada, physical constitution sound, was admitted into the Pilgrim Hospital, Gya, on 28th January, 1868, with compound comminuted fracture of both bones of the right forearm caused by gun-shot wound.

The history of the case is as follows:—He states that three days before his admission into hospital he was wounded by the accidental discharge of a shikari's matchlock; that upon receipt of the injury he fell down in a state of insensibility, and, on recovering his senses, was told that the matchlock was loaded with shot, and not with ball. He thinks he was distant some three or four bâus from the weapon when it went off, but his statements are rather vague on this point. When sufficiently recovered from the primary effects of the injury, he was sent on to Gya by the native doctor under charge of the Police. The notes of the case kept by the Sub-Assistant Surgeon furnish the following particulars.

January 28th, 1868.—*Symptoms on admission.*—An ugly-looking lacerated and contused wound, three inches in length and breadth, at the middle of right forearm; both bones at this situation smashed into pieces; considerable swelling and tension of the parts above and below the seat of injury; patient complains of much pain and restlessness, but otherwise there is comparatively little constitutional disturbance, and no symptoms of collapse.

Injured forearm to be placed on a splint, and supported by a bandage. Milk diet. ℥ss of solution of morphia, contain-

...phor mixture,

...and is not irritable. Diet—sago and milk, beef-tea, country rum ʒiii.

...

...

...

℞ Ammon. bromid.	...	...	gr. lii
Tr. hyoscyami ...	...	...	m xx
Aq. camphoræ ...	...	...	ʒi

...ʒvi.

...

Patient complains of pain in the stump. Slept tolerably well ... Pulse accelerated, but tongue clean and moist, and appetite good.

...

...—Slept well. Dressing disturbed, and much less offensive.

...

...—Ligatures have all come away. Patient expresses himself as feeling very comfortable, and says he has no pain in the ... Sleeps well, enjoys his food, and is now taking his ...

8th.—The character of the discharge has changed to that ...

...—Patient doing well. From this time he progressed ... March with a wound quite healed, and in great health.

REMARKS.

This is an interesting case, as being of a kind not often met with in civil practice. The patient being of advanced age was the more liable to diseases of a low type, and to any one of the ...

Amputation was imperative, for the injury was severe, and ... of integument, muscle and nerve, to complete disorganization, with shattering of bone.

Inflammation had set in throughout the whole extent of the ... soft parts. Under these circumstances, it was certain that any measure short of amputation would be inevitably followed by the supervention of gangrene. At the time of operation, on ... recovered entirely from the effect of shock, and thus far bid fair ...

A ... was lodged in some portion of bone or muscle. But this was ... could be found buried in the sub-cutaneous tissue or muscle. It is most probable, therefore, that the matchlock was loaded ... tact with the bones it shattered.

... I extracted, was deeply embedded in the substance of the ...

THE TREATMENT OF GONORRHŒA AND OF SYPHILITIC WARTS.

By J. B. HAMILTON, M.D., T.C.D., M.R.C.S.,

I have ... Dr. Hewitt ... the treatment of gonorrhœa by ... ; I ... "...

... will often rapidly cure the disease; but are we justified in ...

... stage of the disease I have frequently used blisters, and with great success. The following is the mode of treatment I always adopt with ... regards the consequence of gleet, strictures, &c.

... saline purgatives in use in colder climates), and the patient is ... warm water, so as to wash the passage, and immediately after- ... soup. This to be retained, as long as possible, by grasping the glans penis with the fingers and preventing its escape.

The relief obtained is often wonderful. The starch seems to ... relieved. To the starch may be added a little "vinum opii," ... mucous surface of the urethra, and after a day or two astringents, ... until the usual injections can be employed without pain.

This treatment I supplement with the following electuary, ... of the ...

℞ ...	...	...	ʒi
...	..	..	...
...	..	..	...
...	...	...	... M. F. Electuarium.

... When all the inflammatory symptoms have disappeared, and ... any new principle, but perhaps the combination may be considered worthy of a trial; and if fairly carried out, I am confident that the results will be found satisfactory.

... way, I have several times treated large warty growths; and if fairly tested, it will, I think, be found to be a most efficacious and painless method.

... well always to give a translation of the native terms; as, for in- ...

... Hamilton, M.D.

ABSTRACT OF LITHOTOMY CASES PERFORMED IN THE GOVERNMENT CHARITABLE DISPENSARY AT GOOJERAT DURING THE PAST 27 MONTHS, FROM 8TH DECEMBER 1865 TO 27TH MARCH 1868.

By G. E. POOL,
Civil Assistant Surgeon.

Number.	Names.	Age.	Caste.	Sex.	Date of operation.	Cured and Discharged.	Died.	Days under treatment.	Remarks.
1	Janee	22	Mussulman.	Male.	8-12-65	27-12-65		19	
2	Sahib Deen	40	Do.	Do.	27-12-65	29-1-66		33	
3	Mubaruloo	8	Do.	Do.	27-12-65	29-1-66		33	
4	Kutub Deen	50	Do.	Do.	27-12-65	25-1-66		29	
5	Noor Deen	32	Do.	Do.	10-3-66	30-4-66		51	
6	Boodah	8	Do.	Do.	10-3-66	6-4-66		27	
7	Jalal	4	Do.	Do.	10-3-66	6-4-66		27	
8	Gohur	40	Do.	Do.	10-3-66	18-4-66		39	
9	Smail	9	Do.	Do.	12-3-66	11-4-66		30	
10	Karum Deen	11	Do.	Do.	22-3-66	10-4-66		19	
11	Lagoo	28	Do.	Do.	22-3-66	27-4-66		36	
12	Kamulah	40	Do.	Do.	3-4-66		7-4-66	4	
13	Mahanda	14	Do.	Do.	3-4-66	16-4-66		14	
14	Soobhaan	6	Hindoo.	Do.	16-4-66	30-4-66		15	
15	Karum Khan	7	Mussulman.	Do.	16-4-66	30-4-66		15	
16	Rumzan	8	Do.	Do.	16-4-66	3-5-66		18	
17	Azee Shah	8	Do.	Do.	16-4-66	4-5-66		20	
18	Mohemdbur	50	Do.	Do.	16-4-66	30-4-66		15	
19	Hatum	60	Do.	Do.	17-4-66	4-5-66		19	
20	Ahmid	28	Do.	Do.	17-4-66	28-4-66		12	
21	Rabeka Bebee	36	Do.	Female.	17-4-66	28-6-66		11	
22	Ulah Ditta	8	Do.	Male.	30-4-66	10-5-66		12	
23	Fakeeria	26	Do.	Do.	28-5-66	25-6-66		28	
24	Noor Deen	7	Do.	Do.	6-6-66	22-6-66		17	
25	Oomurbux	45	Do.	Do.	8-6-66	5-8-66		68	
26	Rehemtbeg	3	Do.	Do.	9-6-66	22-6-66		14	
27	Ahah Dad	19	Do.	Do.	9-6-66	8-7-66		29	
28	Karum Bad	13	Do.	Do.	16-6-66	3-7-66		17	
29	Noor Mahee	30	Do.	Do.	24-6-66	19-7-66		25	
30	Sodagur	32	Do.	Do.	24-6-66	8-7-66		14	
31	Mohemid Hyat	4	Do.	Do.	24-6-66	4-7-66		10	
32	Karumbux	70	Do.	Do.	1-7-66	17-7-66		16	
33	Salum	3	Do.	Do.	2-7-66	10-7-66		8	
34	Keshur	10	Hindoo.	Do.	4-7-66	27-7-66		23	
35	Nasser	20	Mussulman.	Do.	11-7-66	6-8-66		26	
36	Noor Deen	22	Do.	Do.	28-7-66		30-7-66	2	
37	Deena	22	Do.	Do.	1-8-66	20-9-66		40	
38	Mussoo Shah	4	Do.	Do.	10-9-66	20-9-66		10	
39	Mahee	20	Do.	Do.	10-9-66		13-9-66	3	
40	Gunesha	14	Hindoo.	Do.	22-9-66	4-10-66		13	
41	Dowlut	4	Mussulman.	Do.	16-10-66	31-10-66		15	
42	Fatteh Deen	8	Do.	Do.	10-11-66	28-12-66		48	
43	Rahah	35	Do.	Do.	10-11-66	14-12-66		34	
44	Gokul	60	Hindoo.	Do.	19-11-66	12-12-66		23	
45	Bhagh	3	Do.	Do.	26-12-66	16-1-67		21	
46	Mohkum Deen	14	Mussulman.	Do.	28-12-66	18-1-67		23	
47	Jawahur	28	Do.	Do.	26-2-67	27-3-67		29	
48	Rokun Deen	36	Do.	Do.	26-2-67	21-3-67		24	
49	Datta	25	Do.	Do.	1-3-67	18-3-67		17	
50	Nehal Chund	7	Hindoo.	Do.	1-3-67	21-3-67		20	
51	Gaman	4	Mussulman.	Do.	14-3-67	2-4-67		19	
52	Bhurree	7	Do.	Female.	15-3-67	19-3-67		4	
53	Nubbeebux	6	Do.	Male.	17-3-67	10-4-67		24	
54	Mohemid Deen	4	Do.	Do.	29-3-67	12-4-67		14	
55	Anabux	50	Do.	Do.	29-3-67	17-4-67		19	
56	Jawahur	28	Do.	Do.	29-3-67	6-4-67		8	
57	Mohemid Khan	9	Do.	Do.	18-4-67	2-5-67		14	
58	Nanuk	12	Hindoo.	Do.	13-4-67	10-5-67		22	
59	Karum Singh	40	Do.	Do.	25-4-67	30-4-67		5	
60	Kadurbux	35	Mussulman.	Do.	25-4-67	14-5-67		19	
61	Ulah Ditta	9	Do.	Do.	6-5-67	20-5-67		15	
62	Mirna	13	Do.	Do.	23-5-67	18-6-67		26	
63	Kattu Deen	70	Do.	Do.	11-6-67	18-6-67		7	
64	Alah Deen	70	Do.	Do.	11-6-67	30-6-67		19	
65	Emam Deen	3	Do.	Do.	17-6-67	6-7-67		19	
66	Boodah	1	Do.	Do.	17-6-67	2-7-67		15	
67	Noor Deen	4	Do.	Do.	26-6-67	15-7-67		19	
68	Azam Shah	34	Do.	Do.	15-7-67	6-8-67		22	
69	Jeewun	25	Do.	Do.	22-7-67	13-8-67		21	
70	Mehr Alum	56	Do.	Do.	22-7-67	15-8-67		23	
71	Boodah	9	Do.	Do.	4-8-67	27-8-67		23	
72	Karim Alee	8	Do.	Do.	4-8-67	26-8-67		22	
73	Hussoo Bebee	40	Do.	Female.	15-8-67	26-8-67		11	
74	Azam Dad	27	Do.	Male.	1-8-67	16-8-67		12	
75	Salum	41	Do.	Female	27-8-67	30-8-67		3	
76	Emam Deen	7	Do.	Male.	28-12-67	22-12-67		24	
77	Ramgee	3	Hindoo.	Do.	29-12-67	22-12-67		24	
78	Baswa	45	Do.	Do.	14-3-68	16-4-68		33	
79	Noor Mahmud	40	Mussulman.	Do.	14-3-68	12-4-68		29	
80	Oomur Deen	4	Do.	Do.	14-3-68	27-3-68		13	
81	Dadoo	40	Do.	Do.	27-3-68	20-4-68		24	
82	Mahmood	8	Do.	Do.	27-3-68	16-4-68		20	
83	Mukhun	5	Do.	Do.	27-3-68	13-4-68		17	
84	Jeewun	3	Do.	Do.	27-3-68	19-4-68		23	
85	Ahmid	7	Do.	Do.	27-3-68	22-4-68		26	

Weight of the stones, from two drachms to eight ounces; the number extracted varying from one to ten, of different sizes, generally from 2 to 4, in the adult as well as children.

GOOJERAT, 23rd April, 1868.

TWO CASES OF CALCULUS VESICÆ.

By F. CORBET, M.D., M.F.,
Civil Surgeon, Aurungabad.

CASE I.

[illegible] aged [illegible] years, who [illegible] the [illegible] Hospital [illegible] suffering [illegible] years. [illegible] 1865, [illegible] and [illegible] [illegible] [illegible]

The Indian Medical Gazette.

It is unnecessary to repeat that all communications for the "Indian Medical Gazette" should be written as legibly as possible, and only on one side of the sheet of paper.

To ensure insertion, it is desirable to receive matter early in each month.

Notice of the cessation of any subscription.

Communications and letters for the Editor should reach him by the 15th of each month at latest, else they cannot be inserted in the following number.

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THE CONSERVATION OF THE PECULIARITIES OBSERVABLE INDIA IS EARNESTLY RECOMMENDED.

SUBSCRIBERS.—Subscribers are particularly requested to notify any change of address or cessation of engagement, by communication addressed to the Publishers of the paper, Messrs. WYMAN BROS., Printers, Hare Street, Calcutta.

Hare Street, January, 1865. } WYMAN BROS., Printers.

"The disease under the name of cretinism has of late years been the subject of much discussion. Among those who have written on the subject in Switzerland, there is a general agreement as to the causes which produce it, and the means which would prevent the development of the disease; and yet the progress of the disease and the misfortune of the persons it affects have gone on unchecked for centuries."—DR. REID, ANNUAL DISCOURSE.

"ONE YEAR MORE."

An account of the closing of our service by a paragraph, another [illegible] to the memory of Hamilton. The grave has [illegible] the work at last, and reached to the grave—the grave of the [illegible] and guide, but to say who have [illegible] long, fretful to the end, it longer and [illegible] Hay in the last month, Dr. Nesmith, Deputy Inspector-General at Hyderabad at Agra, attained his last thirteen years—that [illegible] which has come to be a honour to a good [illegible] to necessary inquiry in India, would have [illegible] many a heavy and anxious moment of the evening to [illegible] in a [illegible] chapter—indeed, one book, in truth, the [illegible] Nesmith [illegible] and death; [illegible] year, and Dr. Nesmith [illegible] and passed in the enjoyment of the several [illegible] to which his long and honourable career would have entitled him.

It is a necessary [illegible] which is recorded in [illegible] hour, however, [illegible] a death and a [illegible]. When it was promulgated that a Deputy Inspector-General of Hospitals [illegible] years' service, he [illegible] to an additional [illegible] of fifty per annum, [illegible] and [illegible] [illegible] [illegible]

Department has long entertained, of an amelioration of the existing system. On submitting the subject to an old and experienced administrative medical officer, [who is anxious to the Department was earnest and sincere], some time years ago, he urged inaction for the present, on the ground that the position of the Apothecaries and Stewards of the service was about to be placed on a new footing. This has now been done, and whilst the Department [illegible] its regard, the widows have not been lost sight of. No scheme has been drawn of the options, however, and the provision for the widows is not so complete that more is not required. It would be accepted as a modest, round which the members of the Department might bring their own contributions, until the accumulated sum should allow of a very comfortable income being provided for all the "best ones that are left," and many as well as widows. We took great interest in the subject several years ago, and the present Editor of this journal was President of a Committee convened at Lucknow, for the purpose of taking it into consideration. The Committee proposed that Warrant Officers in all departments of the service should join the fund; and circulars were issued, inviting them to do so. The replies received were not uniformly in the affirmative, although the general feeling was in favor of it still, were it not for the Government assistance now withdrawn. This, however, is a matter open to discussion. The families of Warrant Officers, in other departments, are frequently left more or less destitute, as those (barring a small pittance of the Subordinate Medical Department were; and there is no more provision for the one, than, until the other day, there was, the widows excepted, for the other.

The following is a record of the proceedings of the Committee which was convened at Lucknow just eight years ago —

At a meeting of Subordinate Medical Officers, (Dr C. R. Francis, Surgeon, Her Majesty's 84th European Regiment, in the Chair), assembled at Lucknow, on the 13th June, 1860, for the purpose of inquiring into the present state of the Widows' and Orphans' Fund, which was established at Fort Saint George in 1854, it was resolved, first, that the following members thereof constitute a Committee, with power to add to their number —

President ...	Dr. C. R. Francis.
Members ...	Mr W. Bonnar, Steward.
	,, E. Davis, Apothecary.
	,, T. B. A. Lewis, Steward.
	,, R. Pereira, Asst. Apothecary.
	,, J. J. A. Simmons, Asst. Surg.

Mr. Bonnar was requested to act as Secretary.

2. That Proposition 1 of the Proceedings of the Meeting held at Fort William on the 14th December 1854, for the formation of the Widows' and Orphans' Fund, be read to the Committee, and that it be explained to the assembly that the Fund was established, and invested, by the Government of Fort St. George, in the Bank of Bengal where the money is now held, and from which certain widows are enjoying pensions. A set of suitable rules were framed. And that the Committee be requested to point out the Rules in the said Proposition of the Bengal Government, Family Pension Fund, which they think inapplicable to the Widows' and Orphans' Fund of the Subordinate Medical Department, in order to frame the rules of the latter Fund. That the Committee be requested to submit a report for the use of future Committees, and such matters had arisen in the progress of the Fund, since its formation, and that the Secretary be requested to read to the Committee the letter addressed to the President of the Committee by Dr. Francis, in which he had written to Mr. Tait a few weeks ago about his report, and that his attorney (Mr. Tait being in England) had replied that it would be forthcoming on the [illegible] [illegible].

3. That the present state of the Bengal Family Pension Fund be explained to the Committee, that the Fund is under the management of Mr. John M'Leod, Apothecary, and Secretary to the Medical Board at Fort William, and Secretary to the Fund under its control.

4. That the Committee, having [illegible] the [illegible] of the Bengal Family Pension Fund, and the Rules framed for the management of the Widows' and Orphans' Fund of the Subordinate Medical Department, and having [illegible] the amount of subscriptions [illegible] the resources of the fund, the Committee resolve that every Warrant Officer in the various departments of the service should be solicited to become a [illegible] proceedings, and addressed by means of a short circular, which the heads of departments should be requested kindly to convey to him. Referring to the superior value of the fund thus united, the Committee determines that it will be unwise to proceed further for the present, until the sense of the service has been taken. It therefore [illegible] subjoined circular, and to terminate their proceedings.

In accordance with the above resolutions, a circular was issued and forwarded, and, as above stated, a variety of replies were received.

Subsequently to these a few of the subscribers to the fund agitated the question of reimbursement; and this was eventually carried out. The whole subject has been *in statu quo* ever since, and the point for consideration now is, shall anything be done or not? The department has delayed taking any further action, with a view to forming a new fund, until its *position* should be finally determined. There is now no reason for delaying any longer. A portion of Mr Tait's report, (the legal opinion was withheld in the absence of further information which he required, and, we believe, of further payment,) together with some preliminary tables for calculating the probable amount of mortality and number of annuities, as prepared by Mr. Tait, are with us, and we shall be happy to render any assistance in our power for the purpose of bringing the matter to an issue. If the [illegible] department is satisfied with the position assumed by Government, there is no more to be said.

Since the foregoing was written, we have received communications from [illegible] connected with the Subordinate Medical Service, by which it appears that some correspondence is taking place, and circulars are being issued, with a view to secure unity of action in raising a Widows' and Orphans' Fund in addition to the Government grant. All subscriptions, of which a good [illegible] would be necessary, should be made compulsory, and we learned that Government would, under the circumstances of the failure of the former fund for *want of Government support*, and because the Court of Directors had promised it, take the fund under its own management. We shall be happy to receive a draft embodying the regulations of the new institution. The Subordinate Medical Widows' and Orphans' Fund in the Madras Presidency should be referred to as a guide. It is based on a sound foundation, and works admirably.

METEOROLOGICAL PHENOMENA IN INDIA.

The climate of the [illegible] and breadth of the great continent of India, from its lofty mountainous tracts to the mouths of its lordly rivers, in its skies and in its seas, the convulsions, and ordinary phenomena even, of nature either attain [illegible] proportions, or are remarkable for their erratic tendencies.

There, famines sweep human life from the surface of the earth, not in thousands, but in *millions*. The two greatest pestilences which the world ever saw had [illegible] seats in India,

nay, it is alleged that the very *home* of one of them, cholera, is there. There, cyclones destroy the strongest and most elaborate works of men's hands, as if the construction was of reeds, and the foundations of sand; the Heavens discharge balls of ice,* in hail storms, larger than cricket balls; and rain falls, not in inches, but in feet.†

We are much indebted to Dr. Sutherland, Officiating Head of the Medical Department in this Presidency, for placing at our disposal, with a view to its publication in the *Indian Medical Gazette*, the following account, by Dr. Murray Thompson, of a very remarkable fall of muddy rain, which took place last year at Roorkee and at Nynee Tal in the Himalayas.

The following is a short account of this unusual phenomenon:—"On the 27th of June, 1867, both at Nynee Tal and Roorkee, previous to the fall of muddy rain, a dense yellowish red cloud was observed in the sky. Rain fell, but it was not muddy. On the following day, the 28th, the same peculiarly coloured cloud was seen as early as eight in the morning; later in the day it was observed to be moving from the south-west to the north-east, and at 5 P. M. it had wholly disappeared in the latter direction. At Roorkee I noticed that this cloud was very high. I saw numerous smaller clouds, sometimes of a darker, and sometimes of a paler hue, float under it. The contrast of these lower clouds against the upper yellow red one was very striking, both on account of their colours being different, and their outlines more defined. From eight in the morning till four in the afternoon, the rain fell in short showers, and the water collected from these was always muddy. As might have been expected from the frequent showers, the air was saturated with moisture. Several times throughout the day the dry and wet bulbs were seen to read alike. The barometer from the 26th, when it was above its average height for the month, fell somewhat suddenly on the 27th, and continued to fall on the 28th and 29th, and as suddenly rose to above its average height late in the morning of the 30th. I noticed the state of the barometer before and after the fall of muddy rain, but I do not think there is any connection between the two.

"A specimen of the mud from the rain was examined by the microscope at Nynee Tal by Dr. Hilson, and at Roorkee by myself. It was found in both cases to be composed of inorganic particles, partly amorphous, but mixed with numerous crystals, having their edges much rounded off. Dr. J. A. P. Colles, of the Medical College, Calcutta, also very kindly examined the mud, and his opinion of it was the same as the above.

"The amount of mud contained in each cubic inch of rain was 12·42 grains, so that every inch of rain which fell deposited 149·1 grains per square foot of surface. The water which was filtered away from the mud was not at all like ordinary rain water, as it contained chlorides in marked, and sulphates in appreciable, quantity. Lime was detected in moderate amount, and magnesia in traces; but the most curious constituents detected were, in the first place, a salt of ammonia, most likely chloride; and, secondly, soluble organic matter, in such quantity as rapidly to discolor a solution of permanganate of potash.

"I could not determine more in the way of analysis than the above points. I should add that the rain water used for testing was collected in a clean porcelain basin, and fell in a place quite out of the reach of smoke or other organic impurity.

"The explanation of the occurrence of this shower of muddy rain must, I think, be that it was due to a dust-storm which had occurred at a great distance to the south-west, probably in the Bikaneer desert, in the northern part of Rajpootana; and that during this storm, the dust, instead of being, as it usually is, only lifted but a short way from the surface, had, by an air current of exceptional strength and upward direction, been swept aloft to a great altitude, at which it is not an uncommon thing to have a stratum of air moving in a direction quite different from that of a stratum on the earth's surface."

The above explanation by Dr. Thompson is doubtless correct. On the African side of the Atlantic, and especially in the neighbourhood of the Cape Verd Archipelago, a fine reddish dust, producing an impenetrable haze which occasionally amounts to a dangerous fog, is deposited on the spars and riggings of ships. Although this dust invariably prevails with a north-east, east, or south-east wind, and at seasons when the Harmattan is blowing, it has been concluded that it comes from Africa, near the Continent of which it is so systematically deposited, more especially because the coarser grains fall first. But the microscope reveals, in this dust, certain forms of infusorial life which, amongst others from Africa, are peculiar to *South America*. Lieutenant Maury imagines that these are blown up into the air with the whirlwinds, which prevail about the beds of the Amazon and Orinoco rivers, carried over the Equator northwards by upper currents of air, and eventually brought back by the north-east trade, and deposited on the surface over which it flows. A singular "tally on the winds" is thus brought into view by the microscope. It would have been interesting to compare the solid constituents in the mud, which fell at Nynee Tal, with those of the soil, and in the water in the northern part of Rajpootana. This might still be done if the mud be available, and in sufficient quantity.

"NEW EDITION OF DR. CHEVERS' MEDICAL JURISPRUDENCE FOR INDIA."

We advise our readers, who are interested in the subject of Medical Jurisprudence in India, to avail themselves of the opportunity, which is now afforded, of securing a copy of Dr. Chevers' new edition of this standard work. The entire book will be—for the most part—re-written, and, as much new matter has been added, it will extend, altogether, over some 700 pages. To Civil Surgeons such a volume would be essential. Early application should be made to Messrs. Thacker, Spink, and Co., Calcutta. The price is 16 or 18 Rupees. We regret that want of space prevents our making a more extended allusion to this treatise. We shall hope to [illegible]

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* Falls of masses of ice have taken place in the west of India in the course of hail storms; and we ourselves were witnesses to the fall of large circular blocks which drove every one into their houses during the great hail storm by which Nynee Tal was visited in May, 1856. Some of these blocks weighed nearly 2 lbs., and measured more than 13 inches in circumference. The storm was preceded by a most remarkable noise in the Heavens, which has been very aptly compared by Professor Daniell to the emptying of innumerable bags of walnuts in the air. The blocks were made up of concentric layers, resembling onions.

† The station of Cherrapoonjee was abandoned as a sanatarium, on account of the immense quantity of rain which fell there during the rainy season. Lieutenant Yule, of the (then Bengal) Engineers, measured 600 inches or 50 feet in one season!

SUBORDINATE MEDICAL DEPARTMENT.

[illegible] are, under certain restrictions, to be educated at the Presidency Medical Colleges. But, in carrying out this intention, [illegible] We are the students from the [illegible] by the working of the Government order, it would appear that they are to have quarters at the colleges. But, at the Medical College of Bengal, no quarters are available. Prior to the [illegible] these students were lodged [illegible] Medical College at Calcutta. At that time they were all withdrawn, and the entire class was broken up. Owing to the great influx, which followed, of European troops, of all arms, into the country, and the paucity of medical officers and servants of every grade, the youths were permanently detained, and distributed for duty amongst the numerous European charges throughout India.

[illegible] This pernicious system has now happily come to an end: [illegible] of the Subordinate Medical Department

We have long recently advocated the removal of the "*native doctor*" class from the Medical College to the school at Agra; and we believe that the subject will shortly be brought forward. If this plan could be carried out, (of course *time*, an *increase* of the [illegible] *present staff* at the Agra school, and [illegible] accommodation would be required), then the quarters, now occupied by the students of the "*native doctor*" class, could be made over to those of the Subordinate Medical Department. We shall revert to the subject hereafter.

[illegible] *Subordinate Medical Department, at the present rates and at those last proposed.*

Rank.	Monthly Pay (Fixed Emolument).			Annual Furlough Pay.			Annual Leave Pension.			Monthly Invalid Pension.			Annual Widow's Pension.		
	Present Rate.	New Rate.	Increase or Decrease.	Present Rate.	New Rate.	Increase or Decrease.	Present Rate.	New Rate.	Increase or Decrease.	Present Rate.	New Rate.	Increase or Decrease.	Present Rate.	New Rate.	Increase or Decrease.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
[illegible]					1000-0-0						175-0-0			70-0-0	
[illegible]							90-0-0(a)				175-0-0	+50-0-0			
[illegible]					800-0-0										
[illegible]						-150-0-0									
[illegible]											4-0-0	Nil.			
[illegible]											4-0-0	Nil.		25-0-0	
[illegible]															

[illegible] Assistant Surgeon ... ... ,, 21 ,, | Hospital Apprentice .. .. ,, 10 ,,

SMALL-POX HOSPITAL FOR CALCUTTA.

CALCUTTA is at length to have its Small-Pox Hospital. The urgency has long been recognized; but various circumstances have hitherto combined to prevent its being satisfactorily met. Happily, the Government and the Municipality are now in complete accord as to the extreme necessity which exists for such an institution, and both are agreed as to its site, construction, and maintenance. The Government will build the hospital and keep it in repair, and the Municipality will defray the monthly cost of the medicines and of the establishment. The location of the hospital, now finally settled, is to be at Sealdah,—as open a situation probably as any that could have been chosen in the outskirts of Calcutta. An hospital of this description would be unacceptable in any neighbourhood, but there would be fewer objections to its being built at the contemplated point near the Eastern Bengal Railway station, and in the immediate neighbourhood of the *quondam* bazaar, now utilized as an hospital for paupers, than in any other part of the town. Its construction—the building being intended especially for the reception of natives—will be simple enough. A pucka floor; and pucka pillars,—the sides made of matting; the roof being thatched or tiled;—and the hospital is complete.—There will be four long wards, 92 feet × 42 feet,* for the accommodation of from 30 to 40 patients, each of whom will be supplied, the mean general height being 18 feet, and taking the higher number, with 1738 *cubic*, and 96 superficial square, feet, of space.

Four small rooms, each 10 feet × 8 feet, for cases requiring isolation, and for other purposes, will be attached to each ward, giving an aggregate of sixteen rooms of this description. The entire cost of the hospital will be about Rs. 35,000.

It was at one time intended to locate the building at Chitpore, and more than one site was selected and approved of. But serious objections were raised by some of the neighbours, (before making the final arrangements, the Lieutenant-Governor of Bengal wisely paused to ascertain this point); and, after some discussion, the idea was ultimately abandoned.

We shall reserve what more we have to say on the general subject to a future occasion.

* Including verandahs. These are 10 feet in width.

INTRODUCTORY LECTURE AT THE MEDICAL COLLEGE.

THE usual introductory address, delivered annually, at the commencement of the session, at the Medical College of Bengal, was given this year, on the 15th June, by the Professor of Obstetrics, Dr. T. Edmonstone Charles. The professor deviated from the ordinary groove, and plainly, yet kindly, told the students of their most prominent failings; and, whilst doing so, pointed out how they might shake off the lethargy so characteristic of native youth emerged from the zenana, and qualify at once, even in the early days of their studentship, for the active career of intelligent and zealous practitioners of medicine. But in the first place, asked the teacher, were they *prepared* to do this? Now that they had seen something of what they would have to go through before attaining the object of their wishes, could they make up their minds to encounter the hardships of the road? Was it too rough for them? If so, let them go back, and enter upon some other walk of life. Again, were their capacities equal to their desires? For it is one thing to *long* for knowledge, but quite another to acquire it. The native students of India are admirable learners, speaking generally; they succeed in accumulating knowledge *second-hand* in a way unsurpassed by any students in the world. Let them apply that ability, if they determined to remain, now; and *what*, *by diligent application*, their *newly-acquired* appetite for study. Let them neglect no opportunities for improvement, nor, in various little ways, by giving a spoon, for example, when it was required, opening a shutter to let in more light, and *assisting* when necessary, (not only looking on at an operation,) for showing that they really took an interest in what was being done. It was not dishonorable to give help in this way. *Now* let them, by cultivating individual responsibility, begin to learn the duties of *men*. Too much importance should not be attached to payments for professional acts. It is a glorious patrimony which has been handed down from hoary antiquity, through the vista of many generations, to the professors of medicine, is the Godlike privilege of applying their skill for the benefit of the poor. Let them not be always thinking of remuneration, and of slender incomes. It is probable that if the matter of uniform and other expenses connected with his position were taken into account, the Assistant Surgeon would not be found to be so well off, in point of income, as the *Sub*-Assistant Surgeon. The orator then urged those who had passed through the years of their pupilage, and who were now about to elect a sphere for the practice of their acquirements, to enter the public service and visit different parts of India. Nothing so tended to develope the mind and to give liberal ideas as travel. They would be brought into contact with the indigenous practitioners of the country—the baids and koobirajas—to whom they should be especially kind. The time is approaching when their occupation will be gone. Let not the students of the Medical College, educated with a better light than they ever enjoyed, look down upon these simple fathers of the art of healing. Rather let them endeavour to show in a proper spirit the superiority of Western science, and to induce them to have their sons educated as they themselves had been, and not taught to walk in the light of ancient Mahometan and Hindoo medicine. The baids and koobirajas have begun to see that the competition is unequal; and Dr. Charles mentioned the case of a native who had made over his practice to his son, who has become a Licentiate of the University of Calcutta.

The learned professor concluded a thoroughly practical and earnest discourse by offering, to each and all who had come there to *work*, a cordial welcome and hearty assistance both on his own part and on that of his colleagues. He hoped that they were prepared to recognize loftier elements in the cultivation of medical science than the principles which governed trade. Let them rise above pitiful jealousies; and although two boys and two girls were not bound together by a common religion, the performance of noble acts always brought all right-thinking men together, and was, in itself, a sufficient passport into any worthy community. Trusting then that the *entente cordiale* would exist between them both now and in their professional [illegible] life, he once more bade them welcome.

Notes and Queries.

DOLL WILLIAM CHEWICK

I

II

With cholic, ague, phthisic.

Meetings of the Bengal Branch of the British Medical Association.

(Continued from Vol. III., No. 6, p. 140.)

Dr. Barnard then read a paper on the Pathology and Treatment of "Cholera Sicca," or Insolation. He dwelt on the fact that, owing to the power of maintaining the heat of their bodies at a fixed point, animals exposed to a very extensive range of external temperature, yet that the range of actual *bodily* temperature, within which vital functions could be carried on, was very limited. The animal functions, including the action of the nervous centres, in their respect resemble the combustion of burning bodies, fermentations, and many other changes which will be stopped by any extreme [illegible] known that the temperature of the body may be raised [illegible] and Wilson Philip, that it can be lowered very [illegible] of the blood, the animal functions, and especially those of the nervous centres, can no longer be discharged. In simple uncomplicated insolation, the body is [illegible] to resist the [illegible] of the [illegible] may be that the shock to the nervous system causes death at once by stopping the heart's action. Many deaths from the effects [illegible] system [illegible] least able to withstand depressing influences. At this time, too, [illegible] efforts to digest a heavy supper. As a rule, no organic lesion occur in the nervous centres in these attacks. Hence it was sufficient [illegible] centres had so far cooled as to be able to resume their functions; [illegible] own practice; the second that of the Shunamite's child restored to life by Elisha, which he believed to have been a similar case; [illegible] warfare of [illegible] would have exhibited at Paris last summer. They were, 1st, a modification of the Italian ambulance; [illegible] present system of rolling each bottle separately in tow.

Dr. [illegible] permanent congestion of the solid viscera, the fever returned at [illegible] between those intervals and the phases of the moon, such as was popularly supposed to obtain in the fever accompanying elephantiasis.

Dr. [illegible] On account of the lateness of the hour, the Chairman proposed that the meeting should be adjourned a second time, to allow of the papers read on the two last evenings being discussed.

[illegible] the 24th March at 8 P.M. [illegible] to the Chair.

The [illegible] Annual Meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College, at 8-50 P.M., on Tuesday, the 24th March, 1868. Dr. Chuckerbutty, President, in the Chair.

Dr. Chuckerbutty asked Dr. Barnard if he had satisfied himself that respiration failed in the collapsed stage of cholera. For his own part, he thought that circulation, not respiration, was impeded in such cases, and that artificial respiration would not supply the deficient nervous energy, but would only hasten death by exhaustion. In insolation there was no obstruction to the entrance of air into the chest, but the apnœa arose from the depressing effects of heat on the nervous system, for which the obvious remedy was cold.

Dr. [illegible] and sporadic cholera was a very interesting one. In the former [illegible] receiving little or no blood from the lungs. On the other [illegible] arteries, and great diminution of the temperature. In a paroxysm of intermittent fever, with well-marked cold and hot stages, the [illegible] intense as not to be distinguishable from cholera; and, again, the hot stage of intermittent fever often passes into "ardent fever," or into something which cannot, in severe or fatal cases, be distinguished from it. He had seen cases of intermittent fever, and of what, from their symptoms, must be called ardent fever and sporadic cholera in hospital together, the two diseases [illegible] at Wazeerabad. He [illegible] and severe outbreak of insolation. The use of tatties had been [illegible] country, though not in the Punjab, where the heat was intense. At noon one day a case of insolation was admitted, and though [illegible] admitted before night; and of these thirteen, four died. Dr. Farquhar tried venesection; then the recognised treatment. [illegible] the presence of clouds, of a peculiar fleecy kind, generally preceded an outbreak of insolation. Once, when at Peshawur, he noticed these clouds, and an Artillery man, whom he was attending, [illegible] becoming unconscious with tinnitus, nurium, &c., and recovered [illegible] in patients suffering, or recently recovered, from intermittent [illegible] patient who was comatose from insolation, and breathing stertorously, so far that he spoke, by the bastinado, as had been done [illegible] which he had seen had shown an empty left ventricle, a distended [illegible] right ventricle and pulmonary artery, and gorged veins.

The indication seemed to be to check the extreme chemical action which was going on in all parts of the body by the cold douche. The blood would then cease to be boiled with effete matters, produced by this intense chemical action. The blood thus poisoned blunts, and eventually destroys sensation; and as the poison of insolation acts almost exclusively on the nervous centres, and passes off, like the hot stage of intermittent fever, in a few hours, we may hope, by artificial excitants, to raise the brain, and thus enable life to be maintained till the danger is over. Rubefacients and vesicants do not fulfil this object, as the cold douche and the bastinado do. Artificial respiration, as suggested by Dr Barnard, would supply the brain with the fresh blood, without which it cannot live or act. All these means fulfil more or less the object in view, but we can never be certain of their success, having no means of estimating the amount of the poison by which the nervous system is effected, or of subduing its strength. All means should be tried perseveringly, for insolation, like the hot stage of fever, does not last long.

Dr. Barnard waived for the present the question of the relation between cholera and insolation. He did not believe in the existence of a special poison in the latter disease; but that from some cause the body became unable to keep its temperature so far below that of the air as to allow the cerebro-spinal nervous centres to act. These centres can only work within a certain range of temperature; above or below that they become inactive; respiration consequently stops, and the heart must cease to beat in between four and five minutes afterwards.

Dr. Chuckerbutty thought that in insolation some change took place in the nervous centres, which led to the rapid absorption of heat by the body; but that whether that change was the effect of high external temperature or not, remained to be proved. The cold douche might obviate this condition, but he did not see how artificial respiration would mend matters.

Dr. Francis confirmed Dr. Chuckerbutty's statement as to their being no obstruction to the entrance of air to the chest in cholera. Insolation was certainly common in Calcutta, where most persons already suffered from deficient nervous energy. He thought that most of those present had given a trial to atrificial respiration in this disease.

Dr. Chevers thought that insolation was good deal influenced by predisposing causes, among which were age, corpulence, drunkenness, malarious cachexia, on the approach of the period when an attack of intermittent fever was due. Where a company of soldiers made a hot march, it would generally be found that the men who succumbed to insolation were fat, among the oldest of the party, and more or less intemperate in their habits. Both Dr. Marcus Hill and he had observed a fatal case of insolation, in which the small intestines were full of rice-water stools, like those of cholera.

Dr. Farquhar had seen cases of death from "secondary fever" after cholera, with hot skin, &c., which he believed to have been cases of insolation supervening on the original disease. The effect of any depressing agent in predisposing to insolation, by lowering the vitality of the nervous centres, had been shown in the case of a European regiment, which, though marching at an early hour every morning, lost many men from this disease, until the Surgeon recommended that the men should breakfast before starting. After this was done, no more cases occurred.

Dr. Barnard included all depressing agencies among the predisposing causes of insolation. Among them were, on the one hand, prolonged fasting, and, on the other, the presence in the stomach of a heavy, undigested meal.

Dr. Ewart doubted whether artificial respiration would be of much use, except as a secondary adjunct in insolation, in which death began, not as in drowning at the lungs, but at the nervous centres. Cold is used on a different principle, and is a rational mode of treatment. With regard to the apparent connection pointed out by Dr. Farquhar between the supervention of insolation, and that of the hot stage of fever, Dr. Ewart observed that insolation is not most prevalent at the most malarious seasons. He thought that any periodicity which appeared in cases of insolation was due, not to the effects of malaria, but to the normal periodicity of our ordinary vital actions.

Dr. Francis said that, nevertheless, insolation and cholera very generally went together; insolation occurred here, in Calcutta, chiefly in those months when cholera was most prevalent.

After some further discussion, the meeting was closed at [illegible] by a vote of thanks to the Chair.

NORMAN CHEVERS, *Pres.*

Review.

THE CALCUTTA JOURNAL OF MEDICINE.

We have received the fifth number of this journal, and are very sorry to learn that the Editor is still single-handed. We beg to assure Dr. Sircar that when we made use of the term *Sub-Assistant Surgeon*, we did not allude to him, as we were well aware of his being an independent practitioner. We regret very much to think that the title of Sub-Assistant Surgeon should convey "an everlasting reproach," as Dr. Sircar says it does. We do not despair of living to see it associated with all that is dignified, honorable, and lucrative. We shall have something to say about a portion of the contents of this number of the journal hereafter.

Local Correspondence.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

SIR,—The Medical College at Calcutta had, up to the mutiny, classed the members of the Subordinate Medical Department among its numerous students; but I am sorry to say that, since that period, (one in which the department proved its usefulness) this, like a lot of other privilcges, was most unceremoniously denied us. On what grounds I cannot say, but one thing was very evident. All the medical subordinates, that had the advantage of this boon, proved a credit, not only to themselves and Government, but a valuable and efficient help in cases of emergency.

Now may I ask why, or what is to prevent this privilege being again extended to us? Government get natives, Bengalis, and others educated there; further, schools are being raised for the education of native women in midwifery; and why don't those who have got influence (I mean the heads of the medical department in India) interest themselves so far as to get a limited number of hands from the Subordinate Medical Department admitted yearly into the College? Certainly we have as great a right to their consideration as the natives. Again, this medical education which would be bestowed on us would not be thrown away, for not only would it greatly benefit that much-spoken-of individual, the British soldier, but would remotely do good to Government; for, having got a medical education, and an insight into the profession, we would, as a matter of course, be more reluctant to part with it, and begin life a fresh in some other.

Not wishing to further intrude upon your valuable time, I conclude with a hope, that the *Bengal* Medical Subordinate will, in a short time, be again permitted to avail himself of all the advantages of a thorough, good, and sound professional education in that great goal of science, and his former *alma mater*, the Calcutta Medical College.

A BENGAL SUB-MEDICO.

Extracts.

SMALL CAUSE COURT,—26TH MAY, 1868.

(*Before E. Dickens, Esq.*)

DR. A. J. MEYER *vs.* MR. W. WESTFIELD.

In this case plaintiff sought to recover Rs. 48, fees for professional visits paid to the defendant.

Mr. Dissent with the plaintiff.

Defendant had no pleader.

Mr. Dissent.—We sue in this case to recover Rs. 48 for three visits to defendant on the 8th and 9th April last. Two visits on the 8th, and one on the 9th. The visits are charged for at Rs. 16 each.

Defendant.—I admit the first and second visits on the 8th, but I do not admit the amount. I ignore the visit of the 9th. I admit Rs. 8 per visit for the two visits on the 8th. I do not admit more, because I believe Dr. Meyer's charges are Rs. 8 per visit, and not Rs. 16.

Dr. Meyer.—On the 8th April last, when I went to my office at No. 58, Bentinck Street, I was informed that a letter had

[illegible].—ED., *I. M. G.*

charged Rs. 8 per visit. I have offered Dr. Meyer Rs. 20 for this Court. Dr. Meyer subsequently offered to waive half the amount of the fee for the third visit. I know that some Doctors fession, such as Dr. Brougham, or Dr. Fayrer, but not of Dr. Meyer's position. I never asked Dr. Meyer what his charge was.

Dr. Meyer recalled.—I have always received Rs. 16 from visit. With regard to what the defendant has said about Dr. Brougham, Dr. Fayrer, and myself, I wish it to be clearly understood that I do not consider myself in any way inferior to those gentlemen. I am an M. D, and have been for a very long time in the employ of Government.

Ghazee Khan have been received. That insidious and mysterious disease, diphtheria, has, after showing itself amongst the in a very severe form. Captain Sandeman, Deputy Commissthe station, while another of his children died on the way from the frontier to Simla, and a lady who attended Mrs. Sandeman

THE BENGAL MEDICAL RETIRING FUND.

letter, signed FIAT JUSTITIA, on the above question, the Bengal again brought the subject to light, and trust, Mr. Editor, you will respond to his call, and help our cause with your influence. I quite agree with JUSTITIA that the Fund, as it now exists, is an to bring their grievances fairly and honand ransom.

I cordially agree with JUSTITIA that we should persevere till something of a satisfactory nature is settled, and I consider his will have paid subscriptions amounting to about Rs. 12,542-3-1, (with a balance still due to the Fund) which is nearly the before he receives a fraction of it.

Yours &c.,

JUSTICIAE.

MEDICAL OFFICERS OF NATIVE REGIMENTS.

and Rs. 789-3 "kicking his heels." This matter could easily be settled by Government giving him, say, Rs. 300 unemployed, and Rs. 800 when employed, which I think would be very fair, for I quite agree with HABITANS IN STECO that a man should not get nearly the same pay for doing nothing.

in Command of N. I. Regiments. He ought to bear in mind thing to do for his pay; he has to look after every little detail connected with 300 men, not including native officers and havildars, and besides occasionally commanding the Regiment; whereas the appointment of a Surgeon in medical charge of a Native Regiment is a mere sinecure. He has very little, if anything, to do. For instance, a certain Native Cavalry Regiment in a the Medical Officer walks through his Hospital, which walk 1,000 per mensem. I only wish, my dear Mr. Editor, that I had entered the Medical Service. I think they are the best paid, and most dissatisfied service in the world; their cry is always "more," "more!" HABITANS IN STECO will of course say "Look at the cost of our education!" I hold that Officers in the Artillery and Engineers have expended equally as much for theirs, and are certainly not so well paid, especially the juniors.

Talking about being badly paid. Why, I know three Medical Officers personally, who, if they were out of the service, could hardly obtain their daily bread. I don't mean by this to run down the whole Medical Service, any more than I would call every lawyer a rogue; but I mean to say that there are many men in the Bengal Medical Service who, since their entry into the service, have scarcely opened a medical work, and have not sometimes even a medical work in their possession!

For my part, I think that every Medical Officer should, before he was given permanent charge of a Native Regiment, undergo some severe test as regards his fitness for the appointment.* I don't mean a paper examination only, but a practical surgical examination also.

Fancy, my dear Mr. Editor, the feelings of a combatant officer on being wounded in action, and obliged to call in the native doctor to take off his leg, because he could not trust himself to the surgeon, for fear of being bled to death! I read some time ago a very able article on this subject in some magazine. I forget which. The purport of it was that men who risked their lives and limbs for the good of their country, had a right to demand from Government competent and skilful before they give increase of pay to Medical Officers, see that they, the Medical Officers, are worth the extra money.

I am, yours faithfully,

ANTI-QUACK.

A PROTEST AGAINST QUACKERY OF ALL KINDS.

TO THE EDITOR OF THE "HINDOO PATRIOT."

SIR,—A[illegible] of your much-esteemed [illegible] as well as [illegible] any remarks [illegible] quarter. [illegible] and Rs. 800 when employed, which I think would be very fair, for I quite agree with HABITANS IN STECO that a man should not get nearly the same pay for doing nothing.

[illegible] in Command of N. I. Regiments. He ought to bear in mind [illegible] thing to do for his pay; he has to look after every little detail connected with 300 men, not including native officers and havildars, and besides occasionally commanding the Regiment; whereas the appointment of a Surgeon in medical charge of a Native Regiment is a mere sinecure. He has very little, if anything, to do. For instance, a certain Native Cavalry Regiment in a [illegible] the Medical Officer walks through his Hospital, which walk [illegible] 1,000 per mensem. I only wish, my dear Mr. Editor, that I had entered the Medical Service. I think they are the best paid, and most dissatisfied service in the world; their cry is always "more," "more!" HABITANS IN STECO will of course say "Look at the cost of our education!" I hold that Officers in the Artillery and Engineers have expended equally as much for theirs, and are certainly not so well paid, especially the juniors.

Talking about being badly paid. Why, I know three Medical Officers personally, who, if they were out of the service, could hardly obtain their daily bread. I don't mean by this to run down the whole Medical Service, any more than I would call every lawyer a rogue; but I mean to say that there are many men in the Bengal Medical Service who, since their entry into the service, have scarcely opened a medical work, and have not sometimes even a medical work in their possession!

For my part, I think that every Medical Officer should, before he was given permanent charge of a Native Regiment, undergo some severe test as regards his fitness for the appointment.* I don't mean a paper examination only, but a practical surgical examination also.

Fancy, my dear Mr. Editor, the feelings of a combatant officer on being wounded in action, and obliged to call in the native doctor to take off his leg, because he could not trust himself to the surgeon, for fear of being bled to death! I read some time ago a very able article on this subject in some magazine. I forget which. The purport of it was that men who risked their lives and limbs for the good of their country, had a right to demand from Government competent and skilful [illegible] before they give increase of pay to Medical Officers, see that they, the Medical Officers, are worth the extra money.

I am, yours faithfully,

[illegible] ANTI-QUACK.

A PROTEST AGAINST QUACKERY OF ALL KINDS.

TO THE EDITOR OF THE "HINDOO PATRIOT."

SIR,—A[illegible] of your much-esteemed [illegible] as well as [illegible] any remarks [illegible] quarter. [illegible] society and of England [illegible] [illegible] [illegible]

authorized forms. It is a vice productive of the most dreadful consequences, and the victims of which are chiefly to be found among those who, from poverty or ignorance, are least able to protect themselves from it. I do beseech the influential members of the medical body of this metropolis to do their best to induce the Legislature to adopt stringent measures against this growing evil. Can the public expect no remedy at the hands of such an august body as the Bengal Branch of the British Medical Association, whose main object is to fuse all discordant elements into one harmonious whole, and render them one in thought and action?

I ask every duly qualified *legal* medical practitioner whether he is not desirous that the public and the profession should be protected from such dishonest practices; whether he is not anxious to see the laws enforced against the open and unblushing *pretenders* to medical knowledge; whether he does not wish that the profession should be spared of unmerited* censure; and whether, as a member of a learned and useful profession, he is not willing to possess those rights to which he alone is justly entitled.

As the matter now stands, quackery knows no bounds in this country.

Firstly.—A class of men, (rather boys) mostly the unpromising students of the Medical College, who having failed successively for two or three years in the First Examination for Licentiate in Medicine, or who having been obliged to leave the College during the dissecting season after studying for *one session* only, or who have been ignominiously expelled from the College for some misdemeanour, unhesitatingly open a medicine shop in some quarter, and giving a bare lie to the public, profess themselves to be passed students of the College, and thus establish as medical practitioners.

Secondly.—A class of men, a set of incompetent, unprincipled folks, having a smattering knowledge of the English, serve for some years in a dispensary, and having acquired a pretty fair knowledge of the art of compounding medicines, turn out as medical practitioners, quite competent to relieve their sick and ailing brethren.

Thirdly.—A class of medical *patriots*, (so called for their benevolent and patriotic ambition to cure the sick,) who proclaim that their healing science is very easy of comprehension, and can be mastered and practised by everybody knowing a little of English, without sacrificing in the least their own respective callings for livelihood. This *easy comprehension of science* has got good many followers, who, being quite unscientific, unlearned, and unprofessional, are making more *mischief* than good to the community. They doubtlessly volunteer their services, sometimes *most unceremoniously*, and their charges being no way expensive, many of our ignorant, stingy countrymen very easily fall a victim to the *less expensive, & Arambleesum*, and *safer* treatment of Homœopathy or *Humbugopathy*, or, in plain language, *apathy to man*.

Fourthly.—A class of ignorant, illiterate, and useless creatures, who, taking advantage of their grandfathers, fathers' uncles, or relatives, having been once renowned for being famous native *kobirages*, learn by rote a few verses or *slokes* from their ancestral *pooties* or manuscripts or the *nidan shastra*, and taking in their pockets a handful of *pills* and *powders* of the most heterogeneous composition, go about the streets from lane to lane, professing to be competent physicians.

Fifthly.—A class of up-countrymen and the followers of the prophet, who, like their brethren of the fourth class, know nothing of the science they profess, but call themselves *hakims*, and earn their livelihood by the pretext of knowing all that their learned ancestors knew of the science. Besides these, there are other classes of men who profess to cure diseases by inspirations, hallucinations, *montras*, &c., and by the administration of drugs or nostrums said to be received from saints, *faquirs*, deities, godheads, &c.

Really it is very painful and heart-rending to witness such persons arrogantly tendering their services as medical practitioners, and most *cruelly* sporting with the lives of their fellow-brethren.

All these classes of unprofessional men, without any knowledge of the pathology and morbid anatomy of diseases, without any attempt to ascertain their causes, or to understand their various symptoms,* diagnostic, prognastic, or pathognosuduice,* imprudently venture to take up the most serious cases, and, knowing the visease merely by its *name*, administer by turns all the medicines they have heard of in connection with the disease, without any idea of their *modus operandi*, or the system. I do heartily pity these unprofessional brethren who, from sheer selfish motives, deliberately act against the simple rules of justice and humanity. I do pity *more so* those rich and influential parties who knowingly encourage such illegal and vicious practice, and thus set a bad example to the ignorant public.

The deplorable results to the patient, and the unblushing effrontery of the quack, are facts daily witnessed and lamented by every intelligent member of the community. The injury sustained by the medical profession, and the baneful effects produced on society, are no less felt by all. I therefore entreat earnestly the members of the medical profession to give this subject their best and early consideration in their Association, and endeavour to root out an evil so detrimental to their prospects and reputation, and so infurious* to their suffering brethren.

I doubt not that the unanimous voice of the profession would cordially echo the sentiments I have thus expressed, and hope they will all join in maintaining their rights *firmly*, *constantly*, and *consistently*, and thereby confer inestimable benefits on the country at large.†

Yours faithfully,
JUSTITIA.

Calcutta, 21*st March*, 1868.

WITH reference to Dr. Bhau Daji's remedy for leprosy, a Mr. Ruttomjee Nowrojee, C. M. S., writes:—

"I beg to inform you that I have, in the Christian settlement of Sharanpur, four poor beings who have for several years past been suffering from 'this loathsome and terrible disease.' On hearing of Dr. Bhau Daji's newly-discovered remedy, I applied to him for some, and I am happy to say that the generous doctor sent me at first a small supply for an experiment. I had not used his medicine for more than a fortnight, before I began to perceive a gradual change for the better in my patients. When the medicine was well nigh finished, I requested more, which has been sent to me with that promptitude and generosity which I shall remember with much gratitude. Out of the four patients there are two (both sisters) who are really objects of such wretchedness that death would be far more preferable than life, the terrible disease having broken out fearfully all over their bodies, and not only disfiguring them, but sending out a most disgustingly foul odour from their bodies. Such cases, I had feared, were too far gone out of the reach of any remedy, but I am thankful to say that they are all making a slow, but, I fully believe, a sure progress toward recovery; so much so, that I am bold to say that Dr. Bhau Daji's remedy is an effectual antidote of leprosy. It was not my intention to publish this information at such an early stage. I wished to have waited some months more, when I could show, as I hope to do, some very clear and unmistakeable proofs of recovery; but one or two remarks of the 'Inquirer,' and justice to the skill and laudable efforts of the excellent Dr. Bhau Daji, have prompted me to write."—*Pioneer*.

THE results of Dr. Cayley's medical operations in Ladakh, says our contemporary, during the past year, have given great satisfaction to the Home Government. The doctor's laudable efforts have been, beyond a doubt, the means of relieving much suffering. Many of the merchants and others whom Dr. Cayley met in Ladakh have returned to their homes, feeling a lively gratitude for the benefits they have received. By such means—the Home Government remark—as testified on many previous occasions, by the medical officers of the Indian Government, the confidence of the people may be gained, even on the remotest outskirts of civilization. Sir Stafford Northcote will always learn with satisfaction that the medical science of officers employed on similar missions to distant countries, has been turned to such good account in the interests of humanity.—*Ibid*.

THE *Central India Times* reports that the Conservatory at the Maharaj Bugh at Nagpore has been burnt down, and that plants to the value of Rs. 3,000 have been destroyed.

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* *Sic.* in orig.—ED., *I. M. G.*

* *Sic.* in orig.—ED., *I. M. G.*

† We shall notice this subject in our next issue.—ED., *I. M. G.*

that ere long, when the local manufacture of the alkaloids is

parations from the bark will considerably diminish; that it

second dose, and three a third dose. The value of this liquid febrifuge consists in the fact that it can be readily prepared,

the Central Provinces Government credit for having been un-

appliances, have been organized along the road; and the Medi- thoroughly employed. Conservancy arrangements are being

from g[illegible] markets, and their stores daily examined, to prevent

camps, and only a very few cases have appeared in Jubbulpore.

that the quacks should be prohibited from practising. The, [illegible] cians, and that it would really be a great hardship to those

lamentable extent, the deaths in the month of February last [illegible] of April to 968. As the total population of the colony does [illegible] the following result:—59 men, 13 women, and 17 children killed; animals destroyed, 420; sugar-houses blown down, 24; [illegible] *Mauritius Standard.*

The [illegible] are badly accommodated, the [illegible]tion for the married people being especially bad. The Warrant Medical Officers of that Corps, owing to there being no fitting [illegible] housed in the married quarters of H. M.'s 101st Regiment. It is a great disgrace to somebody to find these valuable servants treated in this unhandsome way. The dreaded months in [illegible] we (and God forbid it) be visited with epidemics, tell me what class of Government servants, in those dreadful hours, is of most [illegible] we pay [illegible]." —*Ibid.*

A [illegible] Governor of Madras recorded a minute on the necessity of [illegible] Government Central Museum there. New library premises are to be erected in the Museum compound, and the Director of [illegible] books and papers that are required for it. Rupees 250 per mensem are to be expended in the purchase of manuscripts. The following order was issued by Government on this subject on the 4th ult.:—

"The Governor in Council directs that Mr. Chisholm be instructed to prepare a design for an addition to the present Museum building, which shall consist of two large rooms for [illegible] two [illegible] and that a competent librarian shall be nominated."—*Ibid.*

CATTLE disease has, during the last three months, again

IT has been ruled by the Government of India that Native Surgeon Jaskissen Dey cannot count towards pension the time that he may serve as Collector of Municipal Taxes in Madras.—*Ibid.*

A SENSIBLE order has at last been issued on the subject of removing troops into camp on the appearance of cholera in an epidemic form. In the late and many unnecessarily deaths that last resource, and only such buildings as have actually presented cases are to be vacated. In fact in this case, the disease would appear in one building, the whole of the troops are not to be moved further into camp. Only the portion of that particular building are to be moved. Similarly, when a troop or company is attacked, it should be dealt with in the same way. The whole of the troops in a station are not to be moved into camp unless it is found that the measures already adopted are insufficient to stop the progress of the epidemic. If we mistake not, the terrible sufferings of the lives in camp near Meerut last year have had something to do with the promulgation of the order referred to.—*Ibid.*

WE regret to learn of the death at Sanhee, in Abyssinia, of Dr. Stewart, the medical officer in charge of the A. Battery mountain train, from heart disease. It is said that Dr. Jenkin, Staff Surgeon in charge of the 2nd Depôt Hospital, is suffering from dysentery, and is dangerously ill.—*Ibid.*

REPORTS have been received from the Consular Agent at Djedda that the great pilgrimage to Mecca has passed off in a most quiet and satisfactory manner. The members of the Sanitary Commission, at Mecca report that the health of the pilgrims has been excellent, although the numbers are said to have been considerably larger than that of last year. It is estimated that 85,000 persons visited the shrines. Fortunately the weather during the period of the greatest assemblage was comparatively cool, the thermometer ranging from 16 to 20 Reaumur. Up to the middle of April a very large number of pilgrims had reached Djedda on their return from Mecca.—*Englishman.*

CHOLERA is reported as having broken out amongst the pilgrims to the shrine of Juggernath. A considerable number is said to have perished. Medicines were being distributed gratis to the crowds demanding relief.—*Ibid.*

EPIDEMIC fever having made its appearance in the Dooars of Bhootan, the Bhootea merchants have broken up their establishments, and left the plains for the hills.—*Ibid.*

THE following list of casualties which have occurred amongst the British troops from the date of their landing in Abyssinia, in December, 1867, to 13th May, 1868, has been supplied by Dr. Currie, Principal Medical Officer with the Force. Seven officers and twenty-five men have died. Of the officers, two met violent deaths, Captain Benson having been drowned on the passage between Bombay and Aden, and Colonel Dunn accidentally shot at Senafe. Two of the men also met violent deaths. Sixty-five per cent. of the deaths resulted from dysentery. Dr. Currie has not yet been able to procure an accurate return of the total sickness.—*Pioneer.*

IT appears that a gradual reduction has been made in the number of the Medical Staff in the Madras Presidency. Some time ago, in 1859, the number of Deputy Inspectors of Hospitals in that Presidency had been reduced from ten to eight, and again, by a further amalgamation, the number was reduced to six. The consequence was that, though the number of the high officials was gradually reduced, the office work increased, as only one establishment was allowed for the amalgamated offices. Since 1859 the Madras establishment has been twice reduced, while in Bombay and Bengal the reduction was made only on one occasion. The Inspector General, Indian Medical Department, has suggested to Government the advisability of having an establishment of not more than three clerks, whose salaries shall be Rs. 75, 50, and 35 respectively in the Madras and Bangalore Offices. It would appear that these clerks are not brought under the Uncovenanted Service Rules; they get no pension for any length of service. The duties which are conducted by the Deputy Inspector General of the amalgamated Presidency and Mysore Circles seem to be onerous, as the inspection of the division extends from Madras to Bezwarah, and even to Cuttack, * while the officer belonging to the Mysore Circle has to see to the establishments in Mysore and on the Western Coast, the Hills, Kurnool, Cuddapah, and other stations in that part of the Presidency.—*Madras Standard.*

THE present Medical Staff at Port Blair will not be sufficient for the work that will devolve on them during the south-west monsoons. Hence two medical subordinates, a second apothecary, and a first dresser are to be sent to Port Blair from Madras by the first opportunity, as their services are very much required at that station.—*Ibid.*

Short Notices of Recent Books.

The Microscope and its Revelations. By W. B. CARPENTER, M.D., F.R.S., &c. Fourth Edition. London: Churchill. 1868.

Dr. Carpenter's book is well known in every part of the world where a microscope is to be found. It is hardly necessary, therefore, to do more than announce the fact that a new edition has been published in order to make it sought for. In this the fourth edition, Dr. Carpenter has, it must be confessed, spared no pains in bringing his book up to the mark of modern botany, and the woods we have to find with him are few and trifling. Still there are faults at least in our eyes. For instance, we think the author has not shown his usual discrimination in his selection of instruments for description. We do mean to say that he has not given us an account of all the first-class microscopes, but we think that, in describing the instruments of some of the more modern makers, the author has been led not a little by prejudice. We think, for example, that his notice of "The Society of Arts" three-guinea microscope is much too laudatory, and that his omission of instruments, like Collins's class and dissecting microscope, is hardly to be forgiven. In regard to accessory apparatus, we find that the author has omitted nothing of any value which has been devised since the publication of his previous edition, and, as usual in all cases, his descriptions are of that graphic nature so characteristic of Dr. Carpenter. There is one exception to this statement, and that is to be found in the paragraph devoted to the subject of spectrum analysis. This, to our mind, is most unsatisfactory. The account of the apparatus is much too general, and the explanation of the various phenomena of spectrum analysis is of so meagre a character, that for all practical purposes this part of the book is valueless to the student. The addition of a number of page-plates on tinted paper renders the present a more handsome volume than its predecessors. In other respects, the difference between the last and the present edition is simply that of modification and detail. The book is, of all works on the microscope, the best companion for the earnest student. It may be more difficult in parts, but it is always clear, and never mere chaff.

Visceral and Hereditary Syphilis, with special reference to metastatic pelvic Diseases. By F. OPPERT, M.D., M.R.C.P.I. London: Churchill. 1868.

Dr. Oppert here sounds a trumpet of warning to those who are opposing the proposed legislation for prostitution. He explains to his readers that syphilis is something more than a malady of the reproductive organs and the skin. That it attacks indeed nearly all the viscera, and that very many of those obscure cases styled cachexia, and which are so familiar to the dispensary doctor, are really cases of visceral syphilis. Dr. Oppert's original observations are valuable, though not numerous, but his abstract of Lancereaux's opinion is most interesting and important. The author has written his book not less for the practitioner than to draw the attention of the authorities with a view to bring about legislation in regard to public prostitution. Syphilis, he says, is still not only a national, but an international plague. Still it is not only an habit to

* Cuttack belongs to Bengal.—ED., *I. M. G.*

[illegible]

The Dublin Journal. New Issue II, April and May. Churchill and Sons. 1868.

[illegible] is a subject which could prove attractive enough to the readers [illegible] tion which admits a paper on this point into a journal exclusively educational, is not likely to find itself rewarded by commercial success. Indeed, we cannot believe that any cheap educational, magazine would find a sufficiently large number of supporters; but when such a periodical runs in exactly the same groove as the *Fortnightly Review*, it enters into competition [illegible] two, that of Professor Williamson on "Experimental Science [illegible] Education" by Dr. Headland.

The Journal of Anatomy and Physiology. Conducted by G. M. Humphry, M.D., F.R.S., and W. Turner, M.B. Second Series. No. II. May, 1868.

We [illegible] as to whether this Journal could continue to exist, a new number has appeared, which, in bulk of matter, interest of articles, number of illustrations, surpasses any of the previous issues. We notice too in this [illegible] Review' the Journal has given a report on the progress of therapeutics, which is of the utmost value both to scientific men and practical physicians. The contents are as follows:—Professor Cleland on an abnormal arrangement of the peritoneum, and on the development of the meso-colon; Mr Devis on the myology of *viverra civetta*; [illegible] on American crania; Dr W. Murray on Osmosis, digestion, [illegible] Humphry on the myology of Oryeteropus and Phoca; Professor Turner on a tumour of the type of the structure of the [illegible]

[illegible] loway's first step, since it enables the young student to as[illegible] accurately. In the absence of a teacher, it is indispensable.

[illegible] by [illegible], M.D., [illegible] [illegible] by W. [illegible], M.D. [illegible]

All [illegible] They have all arisen out of the prize offered by the Ladies' Sanitary Association for the best essay on the subject, and all will do good. All of them, save the essays of Drs. Pearce and Collins, contend for the advantages of vaccination, but the two latter inveigh against the practice of vaccination in a spirit of the wildest vituperation, and the most pernicious adoption of the *argumentum in circulo*. Still we believe the impartial reader [illegible] since they show how little argument lies on the side of those [illegible]

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, May 22nd, 1868.

The [illegible] of the [illegible] St. James' Hall [illegible] state, and was witnessed by several thousand persons, the *élite* of the first society in London. Her Majesty was received with [illegible] to the Prime Minister. The Archbishop of Canterbury said the usual prayers, and pronounced the benediction. The band of the [illegible] incident of the day," went off with much magnificence. The pavilion erected for the occasion, and ornamented in excellent [illegible] Among [illegible] mention the names of Dr. Alderson, Sir Thomas Watson, Sir [illegible] Chambers and Sieveking, Mr. Hilton, Mr. Paget, Professor Huxley, Sir W. Fergusson, and Sir J. Ranald Martin.

In professional circles there is just now a good deal of [illegible] forthcoming meeting (in June). It is beginning to strike practitioners generally that a very large amount of money is annually extracted from their hard earnings, and very lavishly spent on doing very little. The mere fact that over £40,000 have been expended in the achievement of but one real result—the Pharmacopœia—appears to them to be of considerable significance, and suggests the query—ought not some reform to be demanded? The journals do not go so far as this, but still they point out that the Professional Parliament is a very expensive luxury, and they request the members to be more practical and less garrulous! They beg of gentlemen like Sir D. Corrigan and Dr. Wood, [illegible] times a day, to spare their words, and give their thoughts and action to their duties, and to remember that every minute of the Council's Session costs the medical body exactly 12s·6d. It is not yet known what will certainly form the subject of deliberation in [illegible]

successful students at St. Mary's Hospital on Wednesday (20th), the Right Hon'ble Robert Lowe expressed his entire dissatisfaction with the Council, both as to its constitution, its labors, and its costs; and he hinted at the possibility of Government taking the matter in hand one of these days. Mr. Bruce said much the same thing in his remarks to the audience at University College. Mr. Lowe's speech was extremely amusing, since it expressed honestly his opinion of the present condition of medical science. It was well, he said, to "see ourselves as others see us," and in political life this advantage was enjoyed to the utmost. He would therefore tell them what the profane world thought of the profession. It said, and very briefly, that in certain respects the conduct of medical men was most admirable. [illegible] which, honestly enough, had completely rejected the principles on which it had been acting for [illegible] centuries. The public

were disposed to think with Moliere that God had enabled the human frame to bear up against its sufferings, but that the maladies, plus the remedies, were too much for mortals to sustain. Besides this good-natured chaff, Mr Lowe offered some very sound and practical observations. He considered that the present plan of competition among examining bodies was attended with most melancholy results to the profession. He considered too that at the present day education was becoming lamentably sordid. That knowledge was too often sought merely for the purpose of gaining prizes or scholarships, and not for what it really was,—a great good in itself. He urged upon his younger hearers to be tolerant as well as sceptical; to be laborious and observant; never to think they had arrived at the end of knowledge, but each one to bring his stone and cast it into the vast heap which was being raised for the benefit of mankind.

The elections of the Fellows of the Royal Society have taken place, and have given rise to some surprise, and a good deal of disappointment. Of the many well-known physicians up for the F.R.S., only four have been selected, and these, with two exceptions, the least distinguished in medicine. They are Dr. H. Charlton Bastian, Professor of Pathology in University College, and author of several fine memoirs on subjects in Human and Comparative Histology; Dr. J. Barnard Davis, author of Crania Britannica; Dr. P. Martin Duncan, distinguished for his papers on West Indian Geology; and Dr. J. Bell Pettigrew, late Assistant in the Museum of the College of Surgeons, and author of several memoirs on the Anatomy of the Heart, Stomach, and Bladder.

The question as to who shall be future Coroner for West Middlesex is still unsettled. Dr. Diplock holds the inquests, and retains the office. Dr. W. Hardwicke opposes him in Chancery, and has already obtained an order to compel Dr. Diplock to show *quo warranto* he holds the post. Doubtless the legal proceedings will be tedious and costly on both sides; but if the opinion of lawyers can be taken on any case in Chancery, Dr. Hardwicke, if he lives long enough, and should his case not rival the famous one of "Jarndyce *v.* Jarndyce," must succeed to the office now held by his opponent.

The long-accumulating fund for the testimonial to Dr. B. W. Richardson has at last been publicly made over to the inventor of the celebrated ether-spray apparatus for the production of local anæsthesia. On Wednesday (20th) a large and influential meeting was held at Willis's rooms to present Dr. Richardson with a testimonial in recognition of his labors in the cause of science. The chair was taken by Mr. Paget, and the gentlemen on the platform, comprising most of those who subscribed to the testimonial, numbered some of the most brilliant members of the profession. The amount of the sum raised by subscription was upwards of £1,100, and this amount was placed in Dr. Richardson's hands. A very handsome microscope, of Ross's best make, was also presented to Dr. Richardson as a memorial of the occasion. Few men have worked so earnestly, honestly, and successfully to promote the interests of medical science as Dr. Richardson, F.R.S.; and I am sure every one will be pleased to learn that even the small tribute I have mentioned has been offered to his worth.

Some of your readers who may be interested in Irish University education may wish to know the result of the proposals made to Government by the heads of the Catholic University in Ireland. The result has been an unequivocal refusal on the part of the Ministry. The following words, quoted from Lord Mayo's reply, will shew how little disposed the Irish Government is to do anything calculated to injure the interests of the Queen's University:—"The object of the Government was to create an institution which, although denominational in its character, would be thoroughly independent, self-governed, and free from any external influence, either political or religious. *The proposals* made in your letter would strike at the very root of these principles, and I am therefore, with extreme regret, obliged to inform you that the recommendations contained in that letter cannot be entertained."

At a recent meeting of the Pathological Society, Dr. H. C. Bastian brought under the notice of the members the very remarkable observation of which was that when a frog's hind has been ligatured, and the leg so examined under the microscope, the whole corpuscles may be seen performing amœboid movements, and absolutely making their way through the coats of the delicate vessels. Dr. Bastian demonstrated the phenomenon to the Society, and the result has been that an immense deal of controversy has been going on as to who first noticed this remarkable fact. Some say Waller was first in the field; others Wharton Jones, and others Dr Beale. For my part, I am disposed to think that the observations of all three were limited to the fact of the amœboid motion of the corpuscles. At all events, discussion has begun, and medical science cannot fail to be benefited by the results which are likely to arise from it. As a last item, I may mention that an energetic movement is being made to fuse our different Medical Societies together into an *Academy of Medicine*.

Progress of the Medical and Collateral Sciences.

The tactile corpuscles.—Much as has been written concerning the relation of the several parts which enter into the constitution of the touch-corpuscles, the decision of this point in histology seems as far from realization as ever. In a memoir presented on the subject to the French Academy by M. Rouget, this Anatomist discusses the experience of the writers, and especially those of Kölliker and Meissner. After very carefully weighing the statements of these physiologists, M. Rouget observes:—"My researches lead me to reject Kölliker's opinion, and to accept the facts stated by Meissner and Wagner. He concludes, therefore, that the tactile-corpuscle is not simply a mass of connective tissue to which a nerve filament is attached, but that it is a special organ constituted by a special expansion of one of the coats of the nerve tubule which include within it a quantity of granular, ganglionic nervous matter.

Fat from Flesh.—The recent inquiries of Professors Voit and Pettenkofer, of Munich, are sufficient to startle those members of our profession who have for years been basing their treatment of phthisis on the hypothesis of the formation of fats from hydrocarbons alone. The researches of the Bavarian chemists prove beyond all question that fats can be as readily formed from purely albuminous substances as from hydrocarbons. Strange as it may seem at first, it is after all but an application to physiology of the well-known facts of the production of *adipocere* from flesh, and of fatty acids by the decomposition of albumen. In the course of these experiments, M. M. Pettenkofer and Voit submitted both herbivorous and carnivorous animals to a diet of pure albumen, and compared the results with those obtained by feeding animals upon hydrocarbons. The consequence was found to be that the first series fattened rapidly, whilst the second put up very little fat at all. If these conclusions be confirmed, they must seriously affect the existing mode of treating consumption.

Neurine obtained by synthesis.—In one of our late records we announced the fact that Herr Wartz had succeeded in producing neurine artificially by combining its elements together. Since then it has been objected that there was no proof of the identity of M. Wartz's neurine, and the neurine extracted from brain-substance. This objection has, however, been successfully met by Wartz, who, in an elaborate series of experiments, has demonstrated the identity of the two substances by showing that their chlorides crystallize in precisely the same geometrical forms.

The physiology of vomiting.—Herr Schiff's latest enquiries on this point, which were conducted on dogs, lead him to believe that during vomiting the muscular fibres of the longitudinal layer are those which undergo most contraction. During these movements the cardiac orifice, under the influence of the spinal accessory nerve, remains open.

The action of Veratrum Viride.—The tincture *of veratrum viride* being now a pharmacopœial medicine, it is of interest to report some recent experiments which have been made in Germany to determine its exact effects upon the system. The enquiries referred to have been carried on by Herr Oulmont. Having administered both *veratrum album* and *veratrum viride* to animals, he found that the action of the former is distinguished from that of the latter by the greater violence of its effects upon the digestive system, where it always produces inflammatory lesions, and by the greater rapidity of its action. He also investigated the effects of the alkaloid, veratria, and he discovered the very remarkable fact that it is not the true active principle of veratrum. Herr Oulmont's general conclusion bears out the general experience of medical men that *veratrum viride* is a

Improvements in Medical and Surgical Appliances.

surgical apparatus. In the



FIG. 1.

first constructed in America,

only to resemble closely the natural extremity, but to reproduce, as perfectly as possible, the movements occurring

posterior, lateral, and rotatory. In all hitherto-constructed forms of artificial

ment only has been attained.

variety is therefore obvious,

walks are compensated for by the freedom of motion of the peculiar ankle-joint. The

collar of spongy India-rubber, about two

weight of the body is removed, serves to restore equilibrium to the mechanism in-

quad spring is so placed as to act like the quad ceps extens. femoris, and throw the limb

patient's stump. Both the spring and the



figure 2, and whose greatest merit is that it is noiseless in walking, and yet is so

put out of order. Its foot and ankle are

spring, which, in walking, urges the lower leg forward.

shape, simplicity, useful com-

great strength, is likely to

is low. There being too an entire absence of springs and similar mechanisms, it can be

advantage to the patient.

cial leg is that seen in figure 3, which is an improvement on the old leg, known as the

stick. In this the improvement consists in giving a rolling base to the peg, and

er's walking on soft earth, without sinking below the

time, affording an increased power of progression by the

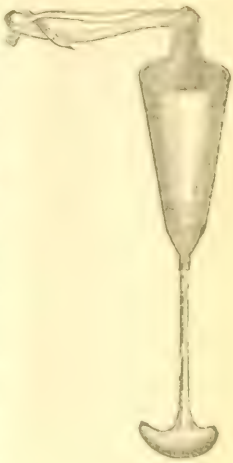


FIG. 3.

present the elbow, wrist, and finger joints. A peculiarity not shown in the drawing,

communicated to the limb just above the elbow-joint, and the result of which is that the arm can be folded across the chest when the elbow is flexed, instead of being thrust awkwardly

artificial arms. In the centre of the palm there is an arrangement for the

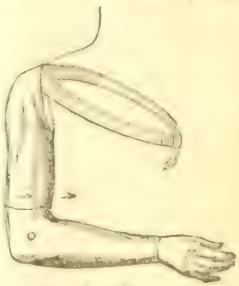


FIG. 4.

preceding, but still one which deserves notice, since it is intended for the poorer class of patients, such

touring men. (Figure 5.) It consists of a leathern sheath having an elbow-joint, and possessing in

drinking-cup, knife,

patient. The wood-cut sufficiently explains the arrangement.

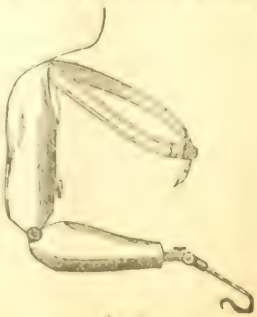


FIG. 5.

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

By J. Fayrer, M.D

(Continued.)

Experiment No. 1.

2nd June, 1868.—Ten drops of Cobra poison, removed from the Cobra on the 9th of June, were injected, with the hypodermic syringe, under the mucous membrane of the mouth of a large rat-snake. It did not appear to affect the snake in the least at the time, or afterwards, and several days later it was quite well. It is possible that the poison may have lost some of its power in the course of 11 days, but it had not altered in appearance, and had been kept carefully closed from access of air. The effect on other animals proves that it had not become altogether inert.

Experiment No. 2.

At 5-7 p.m., an Ardeola Leucoptera (paddy-bird) was bitten by a Bungarus Fasciatus in the thigh.

5-10.—Stretching the bitten leg; breathing hurriedly.

5-11.—Tries to fly. The leg very weak.

5-15.—Sluggish. The leg dragged; there is a peculiar twitching of the throat. The mouth wide open.

5-15.—Tries to fly when roused; the leg is paralysed.

5-30.—Remains in much the same condition.

5-31.—Much weaker; staggers as it moves. The plumage has a disordered and draggled appearance. The bird now crouches on its breast; leg apparently unable to support its weight.

The mouth gaping.

The claws are contracted, and it is unable to walk.

There is a peculiar vibration of the feathers of the neck.

The bitten thigh is discoloured and much congested.

5-53.—Drooping and crouching on the ground.

6-12.—Crouching on the ground; accelerated breathing; eyes quite bright.

6-21.—If roused, it tries to move, but it immediately falls over; the claws are contracted.

6-25.—Tries to rise when roused, and to attack with its beak, but droops immediately after the excitement.

6-30.—Brightness of the eyes diminished; lies prone, resting the head on the point of the beak.

6-38.—Lies helpless and motionless on the ground; slow, feeble respiration.

6-40.—Dead.

After death, Dr. Stolitzca remarked that the blood from the wound was very thin and watery. The bitten leg was discoloured, and, when pressed, a quantity of gas escaped in bubbles. Decomposition seemed to be setting in very rapidly.

The bird was bitten at 5-7 p. m., and died at 6-40 p. m.; *i. e.*, in one hour and thirty-three minutes. The dead bird was given to a Felis Chaus (wild cat); it was eaten with avidity, and no unfavourable result occurred to the cat.

This experiment, like others tried with the Bungarus Fasciatus, seems to prove that its poison, though deadly, is neither so fatal, nor so active as that of the Cobra. This may be due, not only to some difference in the activity of the poison itself, but also to the nature of the instrument with which it is inoculated. The Bungarus, though a large, powerful, and very vicious snake, is armed with very small fangs, and penetration, even under the most favourable circumstances, must be much less than in the case of the Cobra, or of the viperine snakes, which have much longer fangs. The difference in this respect is very striking between the poisonous colubrine and the viperine snakes. The fangs of the Cobra, Bungarus, and other colubrine snakes are much smaller than those of the viperine snakes. Of the latter, the Daboia is the only representative in Bengal; whilst the Crotalidæ, or pit vipers, are represented in India by the different species of Trimeresurus, some of which are almost as formidable as the Crotalus horridus, or Rattlesnake of America, but comparatively rare.

Experiment No. 3.

Another paddy-bird, Ardea Leucoptera, inoculated at 5-27 p. m., in the wing, with some of the same Cobra poison, 11 days old, that had been used for the Ptyas, a short time before. The puncture bled freely.

5-29.—The bird is apparently unaffected.

5-32.—Inoculated again with a quill-pen into a puncture in the hind leg, as the first inoculation seems to have taken no effect.

5-35.—Walks sluggishly. Feathers have a dishevelled appearance; some are erect; the bird shakes himself frequently; seems very uneasy; vomited some shrimps recently eaten.

5-40.—Staggers in walking; very weak in inoculated leg.

5-42.—Crouching; cannot balance itself when it tries to stand; point of the beak resting on the ground.

5-44.—When roused, tries to walk, but falls over.

5-46.—Eyes closed; slight convulsions.

5-50.—Generally convulsed.

5-52.—Dead.

The dead bird was eaten by a dog without producing any result to that animal. In this instance, the poison was at first imperfectly inoculated into the wing, and apparently without any result after 5 minutes, when it was again inoculated in the wing at 5-32 p.m.; death occurred at 5-52, or in 20 minutes.

It is worthy of remark that this poison was 11 days old, and was probably not very effectively inoculated, as the hypodermic syringe was not used, the poison being inserted into the wound with a quill, and yet the bird died in 20 minutes. Whereas a similar bird, bitten by a fresh and vigorous Bungarus, took one hour to die for one hour and thirty-three minutes.

Experiments with the Viper of Russell, "Daboia Russelli," (Vipera Elegans): Bengali name "Lo-

Having procured two full-grown snakes of this species, I made the following experiments.

The Daboia Russelli is very different from the colubrine snakes; it belongs to the sub-order of viperine snakes, family Viperidæ. Of these, only two are known in British India, the Daboia and Echis. The former only is found in Bengal, where it is known as the "Bora," and is justly dreaded as a most

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Note.—The most common of the colubrine snakes I procured in Bengal are:—

1st.—The Naia Tripudians, (Cobra de Capello, Bengalee name [illegible], Calcutta.

2nd.—Bungarus Caruleus, Bengali name Krait, not so common as the

3rd.—Bungarus Fasciatus, Bengali name Sunka. Common.

4th.—Neurophis Bungaroides from Cape Comorin.

5th.—Hydrophis [illegible], or Hamadryas Lapis, said to be found in the Mutlah, Sunderbans; doubtful?

Of the Viperoidæ—Crotalidæ.

6th.—Trimeresurus Carinatus, (I don't know the native name.)

7th.— " Gramineus } are tree snakes.

Viperidæ.

8th.—Daboia Russelli, (Russell's viper, or Vipera Elegans, native name Bora.)

9th.—Echis Carinatus, but this probably not found in Bengal Proper.

The fresh water snakes, Homalopsidæ, are all innocent, I believe, and the Hydrophidæ, or salt water snakes of the Bay of Bengal, and salt water of the river, are all venomous.

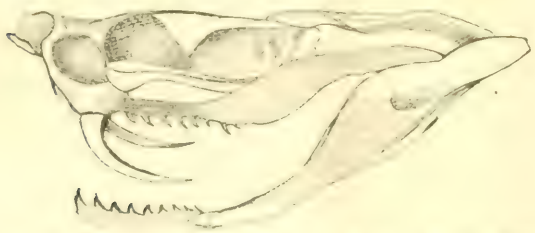
venomous snake. It has various synonyms; the most familiar, perhaps, is that by which it is known in Ceylon, the Tic Polonga, it is also known in Southern India by the name of Cobra Mandi. It is found in the Peninsula of Southern India, and even at the Himalayas, at a height of 5,000 feet, for it has been found at Almorah. It grows as long as the Indian, and is a very powerful and dangerous snake; it is much thicker than the Cobra; its markings are very beautiful; a series of black, white edged, rings ovate and circular, on a greyish brown ground, white belly with black spots. Its head is covered with scales, not shields, as round as very large; the head is broad and well defined from the neck, which is not extensible like that of the Cobra.

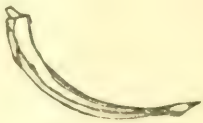
But the striking difference is in the poison fangs, which are very much larger than those of the Cobra. They are recurved, erectile, and very movable; so much so, that when the snake is angry, and about to strike, you can see the fangs erected and depressed quickly in a vibratable manner, totally different to the fixed and much smaller fangs of the Cobra and other poisonous colubrine snakes. [Vide sketch.]

There is only one species of Daboia, and that may be found about Calcutta. I have been informed that it is not uncommon in the Botanical Gardens, and that cattle, as well as men, have met with their deaths from its bite.

The two brought to me were nearly full-grown, and apparently active and vigorous. The snake-catchers who brought them, and who handled Cobras with the greatest ease and freedom, from fear would not attempt to seize the Daboia by the neck, as they said the risk was too great.* The snake did not appear at all more active than the Cobra, and, when seized by the tail, was not more capable of turning on its captor than when the head was confined by compressing the neck with a stick against the ground, it struggled and made fierce attempts to bite, during which, the mouth being open, the gape of which is very wide, the erective and vibratile movements of the fangs that I have mentioned became visible. This snake is the only species of its genus known in India.

VIPER.





Daboia's poison fang.

Daboia Russellii.—Viperine snake with erectile fangs, short and mobile maxillary bone.

When the jaws are opened, the short maxillary bone with its fang is pushed forward, and the fang is erected.

COLUBER.



Naja Tripudians, or Cobra di Capello.—Colubrine venomous snake with fixed fangs, long maxillary bone not movable.

The maxillary bone does not move, as in the Daboia, and the fang is always erect.

Poison fang and maxillary bone of Bungarus.



COLUBER.

Fangless Venomous. Fang developed like the Cobra's, and fixed; the fang smaller to the Cobra's, only much smaller, less known than the Cobra, but I am inclined to regard it as poisonous on first sight.

The above sketches represent the relative size of the fangs in the different snakes when full-grown.

The great difference that exists between the fangs of the venomous Colubrine and Viperine snakes has not, I believe, been sufficiently attended to by any author with whom I am acquainted.

* They fear it as a rabid animal.

It is not only in the greater length and size of the fang, but also in the anatomical arrangement, by which it can be erected or depressed at pleasure, that the Vipers are distinguished from the Colubrine snakes which have shorter and fixed fangs.* The structure of the fang itself is also characteristic. The Cobra's poison-tooth, for example, is like a leaf folded in closely, whilst the fang of the Daboia and other of the Viperidæ is a long perforated tube, and the fang of the Hydrophidæ is an open groove.

Experiment No. 4.

A pariah dog, full-grown, was bitten in the thigh, at 4-27 p. m. of 11th July, by a nearly full-grown, active Daboia. The dog whimpered when the snake's fangs penetrated. He was released, having been held while the snake bit him, and almost immediately, *i. e.*, at 4-28, fell over with a convulsive movement; became paralysed for the moment, and howled violently; as he lay on the ground, the bladder was emptied.

4-29.—In a state of violent tetanic spasm.

4-31.—Lies motionless; eyes bright; muscular system generally twitching.

4-35.—Lies apparently paralysed, but looks about him.

4-37.—Attempted to get up; staggered a few steps, and lay down again.

4-42.—Cannot walk. Lies paralysed; shews no sign of pain.

4-50.—Much in the same state.

5-35.—Lies paralysed, but breathing goes on.

Died a few minutes later.

Thorax opened. Lungs collapsed, not congested; heart natural; auricles and ventricles contained fluid blood.

It is noteworthy that this dog, after the first violent outcry when he fell over, one minute after being bitten, appeared to suffer no further pain; indeed, it seemed unconscious of anything. There was no convulsion. General paralysis, the sphincters included. Gradual sinking from exhaustion. The heart's action continued to the last, and, even after apparent death, the rythmical movements were observed.

The dog was bitten at 4-27 p. m., and died at about 5-40; nearly one hour and a quarter.

The first effects on the nervous system seemed much more violent than in the Cobra bite, and paralysis seemed to follow more quickly, but actual death was longer in taking place. A dog bitten by a Cobra died in about half an hour. The dog bitten by the Daboia died in an hour and a quarter. Possibly, the Cobra injected a larger quantity of poison than the Daboia; and indeed it struck me that there was not so great an effusion of poison from the Daboia as from the Cobra. There may have been something in the mode in which the bite was inflicted. The Cobra was held by the neck, his mouth almost forcibly opened, and his fangs made to imbed themselves in the bitten object; whilst, on the other hand, the Daboia was not so held or applied, for the snake-man was afraid to seize him by the neck, and could only fix him by compressing the neck on the ground with a stick, in which position the animal bitten was presented to the snake.

Experiment No. 5.

A full-grown male cat was bitten by the same snake, in the hind leg, at 4-18 p. m. The Daboia, being secured as before described, plunged his fangs, but not deeply, into the limb; no immediate paralysis of the limb followed, as in the Cobra bite, but the animal was almost immediately affected, and at 4-22, *i. e.*, in fourminutes, was in convulsions, which did not last long, nor were attended by any outcry as in the dog bitten by the same snake. The general convulsions soon subsided, and were followed by general paralysis, the animal lying prone on the ground, with its breathing much accelerated, and with spasmodic twitchings of the muscles of the trunk and extremities.

4-30.—Lies perfectly powerless, breathing rapid; frothing at the mouth, and making efforts to vomit. Bladder and rectum emptied, voided sanguineous mucus.

4-31.—Made an effort to rise; staggered a few paces and fell.

4-35.—In the same state; muscular twitchings continue; cannot move.

4-45.—Still alive, and much in the same state.

5 p. m.—Still alive; muscular twitchings continue, but fainter; breathing hardly perceptible.

5-15.—Quite dead.

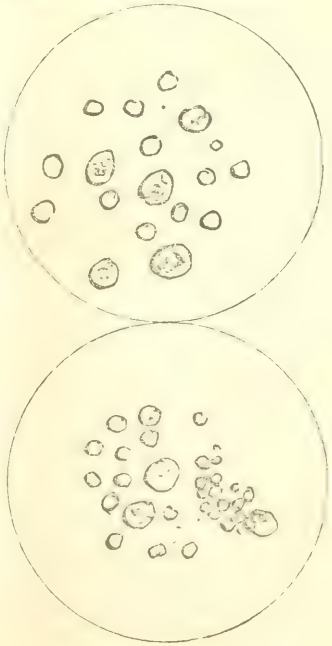
The cat was bitten at 4-18 p. m., and died at 5-15 p. m., *i. e.*, in fifty-seven minutes. As in the case of the dog, the effects of the poison seemed to affect the nerve-centres more violently than the Cobra poison. Consciousness was probably earlier annihilated, but total death occurred later.

I examined the appearances after death, and found that, at 5-45 p. m., or in half an hour, the blood had not coagulated.

The lungs were not in the least congested; there were no clots in any of the cardiac cavities. Blood taken from the right auricle was dark and fluid, but speedily reddened on exposure to the air. Examined later, the power of coagulation appeared to have been perfectly destroyed. I took some away for microscopical examination, and it remained perfectly fluid.

Microscopical appearance of blood of a cat poisoned by Daboia Russellii.

Nachet, 5th object-glass, No. 3 eye-piece.



* The fangs in a Colubrine snake are therefore fixed and pointed, the maxillary bone in the Viperine admits this bone moves freely, and with it the poison fangs.

...ocytes than is usual in proportion to the red; but this may have been a peculiarity of the dog, which was ...

EXPERIMENT No. 6.

(Milvus Govinda.) in the wing. The snake bit near the second ..., and drew blood, at 4-40 p. m., 11th July.

4-59.—The bird seems sluggish, and crouches, but is easily ...

5 p. m.—Sluggish, but moves when roused.

... and he struck a part of the wing where, probably, the ...

EXPERIMENT No. ...

At 4-49 p. m., another kite, of the same size as the last, ... not aggressive, and seemed unwilling to bite; but, when irritated, it slightly wounded the bird with its fangs.

4-55.—Looks stupified; feathers all erect.

5 p. m.—The bird is sluggish, and breathing hurriedly; it is unable to walk, and its claws are contracted into a ball.

Death occurred in 10 minutes. Blood examined under ...

EXPERIMENT No. 8.

A full-grown Daboia was bitten freely, at 5-8 p. m., by a fresh ...

On the 16th July, the Daboia was as well as ever; the ...

The experiment, so far, certainly seems to prove that the veno- ... that ... He to generalise yet on this point, and I consider ...

EXPERIMENT No. ...

A ... bit by a Daboia ... at 12-50 p. m. ... following effects.

... that was used in the last experiment on the 11th July, and has ... since the last experiment. It seemed vigorous and savage, striking at anything that was brought near it. The dog was ... administered. As it took a minute or two to pour the drug down the dog's throat, it was impossible to say how far the struggles were due to fear, and how far to the poison ...

... ging the hind leg.

12-55.—Walking about in the same manner, very restless; breathing hurriedly, and frothing at the mouth. The dog was kept walking about by one of the attendants.

12-56.—Sat down exhausted; breathing very hurried; frothing at the mouth; eye bright and intelligent.

12-57.—Another dose of the drug administered.

12-58.—In violent convulsions; cold water poured on the head ...

1 p. m.—Struggles violently; is paralysed in the hind quarters; constant spasmodic twitchings of the eyelids and other muscles. He rolls his head and body about where he sits, and has the appearance of extreme intoxication.

Cold water constantly poured on the head, and efforts made to rouse the dog by trying to make him walk. The breathing is hard, with a peculiar puffing of the cheeks, like that of an apo- ... can neither stand nor walk.

1-12.—Another dose of the drug administered, and more cold water poured on the head; fresh efforts made to rouse the dog.

1-15.—... succeeds in staggering away ...

1-20.—Seems better; can walk a little, but staggers.

1-25.—... staggers about as before. Puffing of the cheeks, and deep breathing. Evacuations at first natural, be- ... note that he has made several efforts to vomit, but the drug does not appear to have been rejected.

1-30.—Puffing of the cheeks, frothing at the mouth, and deep breathing continue. The dog appears conscious, though intoxicated.

1-37.—Becoming weaker; lies on the floor paralysed. The puffing and flapping of the lips and cheeks continue.

1-45.—Much in the same condition; has just vomited a quantity of thick mucus, and has passed a quantity of sanguineous mucus.

1-50.—... staggered a few paces. Is able to raise the head, which he does when water is poured on it.

For the rest of the report I am indebted to Mr. Seeva, who was present after I was obliged to leave.

At 2-50, the spasmodic movements of the body ceased for a few minutes, and the dog raised himself on his forelegs. He was then removed to a cooler place, and, raising his body, gentle exercise was given by lifting him alternately by the shoulders and hips, rubbing and moving his legs. He seemed to improve again somewhat. He was punkahed, and cold water was dashed on his head, whilst he was again exercised as before; on leaving his body unsupported, he sunk upon his haunches, but immediately after raised himself without assistance, and attempted to walk. The convulsive movements again returned, with hurried respiration, and he remained in that state until he died at 3-49 p. m.

Bitten at 12-50, died at 3-49 p. m.; very nearly three hours. ... is evidently somewhat dif-

fevent to that of the Cobra. The dog was a very healthy and powerful animal, and the snake was not fresh, but still death occurred within three hours. In this case, the bitten limb was paralysed, as in the case of the dog bitten by the Cobra. The first shock to the nervous system was not so severe in this case as in that of the other dog bitten by the Daboia. This may have been due to the fact that in the former case the dog was smaller, and the snake was fresh. I do not at present offer any opinion on the so-called antidote, further than that, in this particular case, I believe it was altogether inert.

The effect of the poison in causing profuse mucous discharge from the stomach and blood and mucus from the bowels is worthy of notice. I examined the blood after death, and found the corpuscles shrivelled and collapsed, but not otherwise changed.

Experiment No. 10.

2nd July, 1868.—A young, but very active and vigorous pig was bitten at 12-27, very slightly in the right thigh, by a fresh Cobra, but it was doubtful, at the time, whether the fangs had penetrated. The pig made his escape, and was caught and brought back in a few minutes apparently unaffected.

At 12-35, he was bitten again by a small, but vigorous Cobra of the spectacled variety, called by the natives "Gomuna" or "Gokurrah." This time the animal was really bitten in two places in the thigh.

12-36.—Struggled violently, and lay down; then got up and struggled violently to get loose from the cord by which he was secured

12-38.—Lies down and rises again; hurried breathing; is very restless; tries to run about; begins to stagger and falls; at 12-40 is unable to rise.

12-42.—Is convulsed.

12-43.—Lies paralysed, breathing deeply; muscular twitchings.

12-48.—Dead.

The pig was bitten at 12-35, and died at 12-48, that is, in thirteen minutes. This disposes of the question of the immunity of pigs from the poisonous effects of the venom of the Cobra.

Experiment No. 11.

A small Tropidonotus Quincunciatus (grass snake) was bitten by the spectacled Cobra that killed the pig, at 1-12 p. m.

1-16.—Very sluggish.

1-20.—Tosses its head about in a convulsive manner.

1-25.—Dead; died in 13 minutes.

Experiment No. 12.

Two innocuous snakes, Dendrophis Pictus, (tree snakes,) one about 3-4 inches long, the other rather smaller, both long delicate reptiles, bitten at 1-7 p. m. and 1-8 p. m. by the same Cobra that bit the Tropidonotus.

1-12.—Sluggish.

1-15.—The small snake dead.

1-16.—The larger one dead. They simply seemed to become sluggish and powerless; there were no convulsions, no writhings, or contortions. They became powerless and died.

After they appeared quite dead, for a moment or two, the tail of each moved slightly.

Large snake bitten at 1-7, died at 1-16.

Small snake bitten at 1-8, died at 1-15.

In one case death occurred in 9 minutes; in the other in 7 minutes.

The Cobra must have been much exhausted, for it had bitten several times before biting these snakes.

Experiment No. 13.

At 1-15 p. m., a Dhamin (Ptyas Mucosus) was bitten in three places by the same spectacled Cobra that bit several other animals.

1-30 p. m.—No apparent effect; the snake is as active as ever.

1-32 p. m.—Bitten again by the same Cobra in the mouth and body.

1-38.—No effect.

1-43.—No effect. Bitten again in the mouth and body by a Cobra that has been in one of the cages, and has not bitten for some time

2 10 p. m.—Is sluggish; when handled, does not try to get away, nor attempt to strike. It became more and more sluggish, and died at 8 p. m. The snake seemed, to me, gradually to become weaker and weaker. No convulsions or contortion of the body before death.

This experiment and the two preceding it prove that the non-venomous snakes are affected by the Cobra poison.

The Dhamin, bitten on the 11th June by a Cobra, did not die, and is alive on the 21st July.

Dr. Fayrer, and Mr. Sceva of the Indian Museum were present at these experiments.

Reaction acid; poison slightly viscid and opalescent.



Appearance of Cobra poison under microscope.*

Nachet, $\frac{1}{4}$ inch; eye-piece No. 3. Lamplight. 10th June, 1868.

* This sketch is one of the two which should have appeared in the last number. The other sketch has been incorrectly engraved, and will not now appear at all. As a corresponding illustration appears, however, in this number, the mistake is of no consequence.—Ed., *I. M. G.*

ON CHOLERA.—No. III.

[illegible]

[illegible] D'Orta, Sonnerat, and Fra Bartoloma, it is evident that cholera [illegible] observation in these parts since 1790, corroborates this fact.* [illegible] toloma informs us the disease broke out with increased ferocity [illegible] to be generated within the area influenced by it at all seasons, and in every direction, but that cholera, invading a community not [illegible] but did not reach the southern part of the district, a distance of 180 miles, until the 5th of October. Mr. Scott remarks that its progress southward from Ganjam to Nellore, against the south-west monsoons, was much slower than from the latter district [illegible] N. E.;†

On the 5th of October cases of cholera were met with in the [illegible] prevalent in all those situations where considerable humidity existed, combined with putrid effluvia, and where the inhabitants, owing to bad clothing and lodging, were consequently much exposed to the influence of the weather. This may probably account for the greater sickness and mortality at some stations than others, and where the nature of the soil, the alternations of temperature, the degree of moisture, and purity of the air, may, I apprehend, be considered as the principal sources from which the increased activity of the primary and essential cause of the epidemic, or greater morbid susceptibility of the human body, may be supposed to originate." The disease was noticed among the inhabitants of Nagore about the 10th of November, and at Madura on the 30th of the month.

I have already noticed the fact of cholera having appeared on the western coast at Surat, Bombay, and throughout the Concan during the latter end of August; it was at its height in September and October, and at the same time Calicut, Quilon, [illegible] N. [illegible] have led us to expect this outbreak of the epidemic along the western seaboard of the Peninsula; for, twenty years before, he had noticed cholera to be most frequent along the Malabar coast during the latter months of the year.

Having thus completed an outline of the history of the epidemic cholera of 1817-18, I may remark that it must not for an instant be supposed that the disease was confined in its operations to the towns I have named; these are specified simply as land-marks, to enable us to comprehend the general bearings of the disease, and as an index of the time when the cholera appeared in certain well-known localities; but we have abundant evidence at our command to prove that, between August 1817 [illegible] 1818, almost the entire [illegible] populated country were subjected to the influence of cholera. It is, nevertheless, remarkable that certain districts, as, for instance, Rohilcund and Bareilly, were exempt from its ravages; the inhabitants of some cities, as, for example, those of Moorshedubad, and localities, as the prisoners in the Alipore Jail, escaped absolutely free from the epidemic which was raging around them; but these exceptions hardly invalidate the rule, that within a period of sixteen months cholera was generated throughout the length and breadth of Hindustan.

Before proceeding with the history of the disease from 1820 to 1830, it is advisable to examine any records of interest we may possess bearing upon the circumstances of cholera as it affected the crews of English vessels, either at sea or in port, prior to 1820. One of the first cases in point is to be found in Dr. Girdlestone's work.* He observes that the troops under the command of Sir J. Burgoyne, three days after landing in Madras, (October 1782,) in perfect health, were attacked with cholera. Mr. Curtis, in medical charge of H. M. Frigate the "Seahorse," states that after the naval engagement between the English and French fleets south of Trincomalee, on the 12th April, 1782, his vessel was sent on service into the Bay of Bengal, but joined the fleet at Trincomalee on the 14th of May. He found the crews of the "Hero" and "Superb" suffering from cholera, but his own men, although employed on shore, remained free from the disease until the 21st of June, when two of them died from cholera; on the following day three more cases occurred; they all proved fatal. The vessel sailed for Negapatam on the 25th, after which date the disease entirely [illegible] outbreak of cholera on board the ship "Mangles." The vessel had experienced very bad weather in the Bay of Biscay, and at the Madeira Islands. He says the lascars were fed merely on rice and salt-herrings, with only half a pint of water per diem, and the sanitary arrangement of that part of the ship in which they lived was fearfully bad. During the month of January 1814, the disease in question commenced "being sudden in its attacks, and more so in its fatal termination; there were no premonitory symptoms. It at once began in all its terror and violence, and terminated in from 12 to 30 hours. The finest Malay men were the first to suffer, and generally fell victims to the disease.‡ It commenced with a swelling and hardness about the epigastric region, with a sense of constrictive pressure of the thorax; violent vomiting; the excretions from the intestinal canal were equally disordered, as exhibited by continual watery stools, coldness of the extremities, with a sense of numbness and cramp in some cases. The feet œdematous; pulse low, and sometimes hardly perceptible; the skin dry and [illegible] heat in the bowels and stomach; the countenance soon became melancholy, sad, and fallen, but the most predominant and distressing symptom was general spasm; the extreme spasmodic rigidity of the abdominal muscles, and then of the neck and face, produced the most painful contortion of the mouth; a film seemed to cover the vision, and exhausted nature soon sank under such accumulated and dreadful suffering. During the short period of six weeks, sixty-five bodies were thrown overboard, and five men died four minutes subsequent to each other, just as we had cast anchor in Table Bay." The vessel was cleaned and purified while at the Cape, and no more cases occurred. Dr. Corbyne had only one [illegible] post-mortem examination. He says — "I found the stomach distended with air, as well as the intes-

* [illegible]

† [illegible]

* Observations on the Diseases of Armies in India, by J. Girdlestone. London, 1788.

† An Account of the Epidemic Cholera of India, by C. Curtis. Edinburgh, 1817.

‡ Treatise on the late Epidemic as it appeared in the central division of the Grand Army in the month of November, 1817. Madras, 1818.

tines, but could discover no obstruction, or even fæces; the coronary arteries of the stomach were considerably distended with congested blood. The stomach, lateral convolutions of the ilium, and the liver had suffered inflammation."* The patient having been taken ill at 6 P.M., died within 36 hours.

Mr. Scott, in 1824, observes that this outbreak of disease on board the "Mangles" could not have been cholera, the œdema and swelling of the feet being symptoms unknown in this affection; but in 1852, Dr. Corbyne, who in the meantime had risen to considerable eminence in the Bengal Medical Service, again asserts:—"I was myself an eye-witness to the destructive operation of this disease (cholera) on board the ship "Mangles" in 1814, on which I embarked for India. We had been at sea about two months when it burst forth with awful violence."†

Surgeon J. Boyle, of H. M. Ship "Malabar," gives us the following history of cholera as it occurred on board a twenty-six-gun ship, while she lay in the harbour of Bombay:—Six of her officers went on shore for a spree; they remained there a day or two, and "had no sooner returned to the ship than three of them were seized with cholera;" they all three died.‡ A few days afterwards a part of the crew were allowed to land; no less than forty of them were attacked with cholera, and five died. Mr. Boyle goes on to observe that in April, 1819, although cholera was in the town of Bombay, the crew of the "Malabar" were healthy. The ship sailed for England, and on the second night after her departure, cholera made its appearance among the sailors, and continued its ravages for five days; in fact, until the vessel reached Cochin; during this time some 4 or 5 men were attacked, and 11 of them died.

Mr. Boyle relates another interesting case, that of H. M. Ship "Minden." "On the 5th of November, 1819, as she was on her passage to Bombay, between that place and Cochin, in precisely the same track as the former ships, she was visited with cholera, which continued with unrelenting violence till the 12th of the month. A few cases occurred after this period, but, generally speaking, they were of a mild and tractable nature; altogether there were 50 cases on board the 'Minden,' and of that number nine died. For some months previous to this the crew had been comparatively healthy; and from the circumstance of having been for some time at sea, had no evident opportunity of predisposing themselves by debauch; but on interrogating those affected with the complaint, it was generally observed that their bowels had been previously in a deranged state."§ The value of this history would have been greatly enhanced, had we been absolutely certain that no communication had taken place between the crew and the shore prior to the outbreak of cholera.

Cholera occurred among the shipping at Diamond Harbour in 1818, in its usual irregular manner; in fact, the only vessel that entirely escaped was the "General Hewett," "the men not being allowed to go on shore, and otherwise carefully protected from the sun and damp."

In 1819, the shipping again suffered severely; the instance of the "Carnatic" is somewhat peculiar. This ship anchored in Madras roads on the 5th of August, clean and with a healthy crew. She sailed for Calcutta on the 20th, but in the meantime six men had been seized with cholera, but they all recovered; seven days afterwards one of the crew was re-seized with the disease, and died on the 20th; and within the three following days, six of the crew were attacked with cholera, and five of them died; subsequently there were six other cases, but they all recovered. The weather was extremely bad, and the ship close to land, being only 15 miles from the shore at Ganjam. "The disease had no appearance of contagion. It occurred only among the seamen, although between their condition and that of the soldiers on board, there was only this difference, that they slept on the gun and the soldiers on the orlop deck. Some were seized who had no communication with the sick; while others escaped who constantly sat on their hammocks."

It is not known what has been the earliest period, after reaching an anchorage, at which cholera has appeared on board-ship, but in the instance of the 41st Regiment, men were attacked on the very morning of their landing, which was the second day after their arrival in the Madras roads.†

Before leaving this part of our subject, we have still to consider a very important case which occurred during the period under review; I allude to the outbreak of the epidemic in the Mauritius in the year 1819. The circumstances of the case are briefly as follows, taken from the journal of the Surgeon in charge of the vessel:—"H. M. Ship 'Topaze' sailed from Trincomalee on the 9th of October, 1819, having fifty-seven men on the sick list; and immediately after leaving, cholera broke out and attacked seventeen men, four of whom died.

"On the arrival of the ship at the Mauritius, on the 29th of October, thirty-six men were taken on shore and accommodated in the Military Hospital, Port Louis; six of these men died, four from the sequelæ of cholera, with which disease they had been seized on board. Three weeks after the arrival of the ship at Port Louis, the cholera made its appearance among the inhabitants, and continued to carry off from fifty to sixty persons daily, chiefly slaves. It appeared immediately afterwards in other quarters of the island with equal fury."‡ Not a single case of cholera occurred on board the "Topaze" after her arrival in the Mauritius, although all the merchant vessels in the harbour were losing men by this disease.

Such is the unvarnished tale of the "Topaze," upon the consideration of which Sir Gilbert Blane lays down the law absolutely in favour of contagion, and with reference to this case exclaims: "can there be a doubt in the mind of any rational being that this disease, never before known in the Mauritius, was imported by this vessel?" There can be no doubt that it is, in opinion of one of the most influential Physicians of the day, not only led the English Government, but the majority of medical men, to espouse the doctrines thus confidently promulgated. Sir G. Blane carries the history of the "Topaze" a step further than the Surgeon of the vessel has done; he informs us that the Governor of Bourbon, under the strong conviction that the disease was contagious, took measures, by proclamation, to bar all intercourse with the Isle of France; but in spite of this, a boat from the shore of Bourbon had clandestine communication with a small vessel from the Isle of France—probably about the 8th or 9th of January, for they left Port Louis on the 6th; after the usual interval, the disease showed itself in Bourbon, so as to leave no doubt of an infection traceable to the boat."§

But let us hear the other side of the question, and turn to the Report of the Commissioners assembled by Major-General Darling, commanding the Island of Mauritius, at Government House, on the 23rd of November, 1819. The English and French members assert that they are "unanimous in not supposing it (the disease) contagious, or of foreign introduction. From the disease pervading classes who have nothing in common but the

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* The Russian Medical Gazette, Vol. [illegible], p. [illegible], [illegible] precisely the same relation [illegible] the epidemic [illegible] the symptoms; they describe the [illegible] after death.—See Annales de Chirurgie et Medecine, Berlin, 1852.

† A Treatise on Diseases [illegible] by E. Corbyne, Calcutta, 1852, p. 45.

‡ A Treatise on the Epidemic Cholera of India, by J. Boyle, London, 1821, p. 31.

§ A Treatise on Cholera [illegible] by [illegible], London, [illegible], p. [illegible].

* Jameson's Report, p. [illegible].

† Jameson's Report, p. 321.

‡ [illegible] Medical Gazette, Vol. IX, p. 220.

§ Observations on Epidemic Cholera, by E. H. Kennedy, London, 1831, 8vo, 2nd Edition, p. 256.

[illegible] until the 29th of October) "it differed in nothing from the cases which have presented themselves since the 18th and 19th instants, [illegible] cured yesterday on the side of the Riviere du Rempart, and [illegible]

[illegible] cholera in 1775, the disease had then extended to the Mauritius;" so far, therefore, from cholera never having been heard of in the Mauritius, we have evidence of an outbreak there in 1775, under very similar circumstances to that which occurred in 1819, [illegible] on the spot, and at the very outset of the epidemic, mentions [illegible] at the "Depot."

But to return to India: throughout the early months of the year 1820, cholera was still very prevalent among the inhabitants of Calcutta, especially during April; at the same time epidemic cholera broke out among the troops composing the Nerbudda field force. Special indents poured in upon the Board for Medicine and Native Doctors, required on account of the re-appearance of cholera in various localities during the [illegible]; as, for instance, in Moorshedabad, Azimgurh, Meerut, Tipperah, Jessore, and Berhampore. From Madras we have similar evidence of reproduced cholera, more or less severe, over the whole Presidency, and here and there it was generated with great virulence.† At the close of the year 1820, we hear of the disease at Mhow,‡ a station north of the Vindhya Mountains, and well to the west of India.

The history of the cholera of 1821 points distinctly to the fact of its becoming more localized in its influence in India than it had been at any period subsequent to 1817; we hear of it being generated with considerable activity throughout its endemic area in Lower Bengal, Ganjam,§ Bombay, and, from time to time, at almost every station throughout the Madras Presidency, but the cases were by no means so numerous or severe as in 1820. The Nerbudda field force, however, again suffered severely from cholera,—the disease evidently still retaining [illegible] peninsula, for not only do we hear of it at Mhow and along the valley of the Nerbudda, but, as I have before remarked, at [illegible] occurred from cholera, and, as usual in this part of India, the [illegible] ber."‖

It is important to keep these facts in mind, as they bear a direct relation to the spread of the disease into Persia in the following year. In the meantime, cholera had extended both southward and eastward of India, Ceylon, Aracan, and the [illegible] following year the country of Siam was absolutely devastated by cholera; it appeared about the same time in Malacca and Singapore. It broke out with great violence in the Phillipine Islands, principally at Manilla.*

We hear of it throughout the years 1820 and 1821 in China, Batavia, and Java, but it is impossible to trace the epidemic over this vast area, the information I have on the subject being principally derived from the "Calcutta Journal" and other local papers of the period; in these, frequent references are made to the fearful ravages cholera committed in these parts, but, in a scientific point of view, they are often silent as to the most important circumstances of the epidemic.

[illegible]

NOTES* ON CINCHONA CULTIVATION IN BRITISH SIKKIM (NEAR DARJEELING.)

By [illegible]

Among the many substantial and enduring benefits conferred upon India by English rule, the introduction of the "quinine-yielding" cinchonas will not be considered by posterity the least [illegible]. Among the [illegible] has granted [illegible] an experiment, most [illegible] the [illegible] an imperishable monument of the benevolence, humanity, and forethought of Government. To have succeeded in ma[illegible] prosperity of the country by the development of our educational, telegraphic, and railway systems, steam navigation, tea cultivation, justice, the great principle of equality before the law, security to life and property—to have endeavoured to adapt the scientific knowledge of the day in conserving the health [illegible] principles of State Medicine, and the prophylaxis of contagious diseases by legislative enactment, are objects of supreme importance, and well worthy of the earnest attention of any Government. But the naturalization of the cinchonas in suitable localities in India, whilst proving to all coming generations the abiding interest which the governing body takes in caring for the health and comfort of the people, also marks the confidence held by the British Government in the progress and efficacy of medicine. Without this, it is impossible to conceive that so much expenditure would have been incurred for the transplantation of the cinchonas from South America into Indian soil. It is owing to this confidence that we have seen a costly experiment undertaken, and prosecuted with a determination and vigour seldom recognized in analogous measures;—not for the purpose of securing an improvement in the ordinary commercial products of India, nor to facilitate intercommunication and the exchange of ideas by a peculiar utilization of steam and electricity, but for the production of a drug employed for the amelioration and cure of the malarious fevers of this and other marshy countries; and this, too, on such a scale of magnitude, as must eventually diminish its cost and bring it within the reach of the masses of the population. When it is remembered that the direct, and indirect, mortality among the natives from malarious diseases is to be counted by *the million, annually;* when it is fur[illegible]

undermines the health of the European inhabitants, and [illegible] of the most formidable obstacles with which we [illegible] to the successful colonization of India by the Anglo-Saxon race, some idea may be formed of the vast benefits that must accrue from the extensive cultivation of the cinchonas, and the consequent cheapening of quinine—the antidote [illegible] available for the cure and prevention of the fevers of prince [illegible] and beauty of the land.

The practicability of cultivating the "quinine-yielding" cinchonas in this country was first pointed out by the late Dr. Royle. This idea, based on botanical inquiry into the respective floras of the spurs of the Himalayas, Cossiah Hills, and Neilgherries, and the cinchona districts of South America, was further elaborated by [illegible], Superintendent of the Royal Botanic Gardens at Calcutta, and by the cinchona plantations near Darjeeling. The conjoint representations of these distinguished botanists placed the question in a clear light before the Bengal Medical Board, [illegible] the Hon'ble Court of Directors to take steps for the naturalization of the cinchona trees in eligible localities in India. The Court of Directors, acting in conformity to the recommendations [illegible] March, 1852, that a gardening collector should be deputed from [illegible] and young plants of the best species of the "quinine-yielding" cinchonas, with a view to their introduction into India." The whole [illegible] Dr. Royle for report. In one part of that report, dated 27th June, [illegible] vation of the cinchona trees, in India, seems to admit of hardly any doubt, if ordinary care be adopted in the selection of suitable localities." He continues, "I myself recommended this measure many years ago, when treating of the family of plants to which the cinchonas belong. I inferred, from a comparison [illegible] cinchonaceous plants, that the "quinine-yielding" cinchonas might be cultivated on the slopes of the Neilgherries and the southern Himalayas, in the same way that I had inferred that the Chinese tea plants might be cultivated in the northern Himalayas." [illegible] valuable kind of yellow bark had only been discovered" by Mr. Weddell, an English Surgeon who accompanied the French Scientific Expedition of M. de Castelnau into the interior of Brazil and Peru, the measures to be adopted for their collection would require great care and consideration to counteract the anticipated opposition of the authorities on the spot. It was also stated that "useful and quinine-yielding cinchonas are to be found in the neighbourhood of Santa Fe de Bogota; the pale barks in the forests near Loxa; the most valuable or yellow [illegible] the latitude of La Paz; and the red bark from near Lima, or [illegible] the extent of distribution of these valuable plants along the Andes; but the useful species do not extend much to the eastward. The operations of a collector, therefore, require to be turned chiefly to the western coast of South America, from [illegible]

Meanwhile, Dr. Royle, on the 14th December, 1852, reported to the Court of Directors that it was desirable to obtain some plants from the different botanic gardens in Great Britain, which [illegible] by Dr. Weddell, [illegible] yellow bark. Plants were, therefore, despatched from the [illegible] Kew, [illegible] Mr. Farmer, who embarked by the Euphrates on the 29th [illegible] his way to China by the overland route; and five of these plants reached Calcutta alive. Dr. Falconer found that these plants did not thrive in the Royal Botanic Gardens on the banks of the Hooghly. They were [illegible] three survived the transit. On the 14th May, 1855, Dr. Thomson reported, on information communicated by Dr. Campbell, the Superintendent of Darjeeling, that "the three cinchona trees there were killed by the cold of last winter." He also says, "I fully concur with Dr. Royle and Dr. Falconer in believing that the climate of the Eastern Himalayas will be found well-suited to the growth of cinchonas, and I do not think that the failure of the first attempt to introduce this valuable plant ought in the least to deter us from further trial." He concluded his letter by stating that he would "communicate the loss of the cinchona plants at Darjeeling by the first mail to Dr. Royle, for the information of the Honorable Court, in the hope that a further supply of young plants will be sent out as soon as possible to renew the experiment."

[illegible] the Government of India the expediency of renewing the ex- [illegible] species of the plant, and by cultivating these in many parts of the country—especially in the Neilgherries, Sylhet, Chittagong, Tenasserim Provinces, and in various localities in the [illegible] early in the year [illegible] introduction of the cinchona trees into India had been forwarded for consideration by Assistant Surgeon Thomas Anderson, M.D., F.R.C.S.E., in which the views entertained mainly coincide with those expressed on the subject by Drs. Royle, Falconer, and Thomson.

[illegible] Court of Directors the necessity of trying the experiment on a large scale, observing that his opinion remained unaffected by the untoward result of the first imported plants, and that he had recommended the culture of these cinchonas, in the localities already mentioned, more than 20 years ago.

The Government of India, the Court of Directors, the Board of Control, and the Lords of the Privy Council, now became deeply interested in the success of the experiment. Dr. Royle was authorized to take steps to find an eligible person to obtain a collection of "quinine-yielding" plants and seeds, but his lamented death prevented the completion of the necessary arrangements. It was stated, however, on the 2nd December, 1858, that "a successor had been appointed to Dr. Royle's post, who will be directed to carry out the instructions above alluded to without any further delay."

On the 5th April, 1859, Mr. Clements Markham, in a communication to Sir George Clerk, K.C.B., volunteered to go out to South America for the purpose of securing the introduction of the cinchona plants into India. On the 8th of April, 1859, Mr. Markham's proposal was considered well worthy of acceptance, inasmuch as that gentleman had stated that his qualifications for the duty consisted of a knowledge of the best cinchona districts, acquired during a residence in Peru and Bolivia; a general knowledge of various species of the cinchona tree; an acquaintance with the Spanish language and with the Quichua or language of the Indians in the districts in question; and an intimacy with many of the public men and landowners on the eastern slopes of the Cordilleras, where the cinchonas abound.

Mr. Markham accordingly undertook the task of importing cinchona seeds and plants into India. He arrived, in due course, at the Port of Islay, Peru, on the 9th June, 1860, with 456 of the more valuable species. On the 28th July, he reached Southampton, with the Wardian cases containing the collection of plants, which were, on the whole, in good condition. Upwards of 216 had begun to throw out shoots, and 93 more remained alive, or

of them germinated.

vigorous condition.

of, Darjeeling retarded the cultivation at first. All that could be

artificial agencies, until suitable localities could be found in which to commence cultivation on an extensive scale. After great trouble, such places were found about twelve miles from Darjeeling in the midst of almost impenetrable forest. With invincible perseverance, and a determination to make the cinchona cultivation a success, which does infinite credit to the energy, forethought, and botanical knowledge of Dr. Anderson, that

places selected by him, had an excellent road constructed from Darjeeling to Rungbee. This road is tolerably level, is scarped out of the north-western aspect of one of the Sinchal spurs, and

a great variety of tropical oaks, until a point is reached, whence

far the greater proportion of the clearances which have been made, especially on the Rishap plantation, are brought directly under view.

ed the soil, elevation above the level of the sea, temperature, and rainfall.

the cinchonas. But even this will not answer, unless the drain-

At the plantations it is found that it should be cultivated in regions sheltered from violent wind or storms, and which are never visited by frost or hail storms. The *cinchona calisaya* grows

cinchona micrantha grows willingly at altitudes corresponding to

cinchona calisaya, it prefers slopes shaded from the morning sun,

time in the neighbourhood of the roots.

All the cinchonas thrive best in a temperature antagonistic to frost, snow, and hail. In the plantations, in British Sikkim, the mean annual temperature at 5,000 feet is found to be about 60°; and at 1,000 feet of altitude, 75°. The great points as regards temperature are absence of extremes, such as frost or extreme drought, with the prolonged, or uninterrupted, operation of a powerful sun. All the cinchonas delight in alternate rainfalls and sunshine, and heavy dews. At Rungbee, the average annual rainfall amounts to 180 inches, whilst it does not exceed 160 inches in the comparatively dry valley of the Teesta. There are not more than two or three months in the year during which rain does not fall,—April and March, and sometimes November; and the absence of rain in these months is compensated for by selecting a northern exposure, by heavy dews, and the cloudiness of the atmosphere alternating with sunshine. To sum up, the *general climate* is comprised in excessive moisture

the absence of violent wind, storms, and hail. The characteristic of the Rishap and Rayen plantations is, that they come within these important provisions. The cinchona plantations, in British Sikkim, usually understood as the *Darjeeling Government*

range. It is bounded on the west by the virgin forest stretching from the Rungbee to the Runjo rivulets, on the North by the Rungbee, and East by the Runjo. Dr. Anderson's house is placed on the highest cleared portion of the spur, about 6,000 feet above the sea level. But the plantation is so steep, that only a small portion of it can be seen from the Superintendent's house. On this plantation, from about two thousand to five thousand feet above the sea level, the spur is chiefly occupied

2 to 3 or 3½ feet in height. Near the gardener's house, where there are extensive nurseries for rearing, propaga-

portion, containing about two hundred plants. These were planted out on the 15th of October, 1864. They vary from nine to ten feet in height. But a few which were put in later, to fill up vacancies, are not more than five feet. The former are in full flower or seed. Nothing can look better than this patch. In a couple of years more, when the whole of the *cinchona officinalis* plantation will also be in flower, the beauty of it will beggar all

eighteen inches long, and embracing half the circumference

covered with moss and straw ever since. On removing this, it was manifest that the lost bark had become completely renewed.

altitude, to the confluence of the Rungbee with the Runjo, the remainder of the spur is occupied by *cinchona succirubra*. The bulk of this ground was planted out in from March to October, 1867. The plants average from two feet to four, and look exceedingly healthy. There is a small portion, near the confluence of the rivers mentioned, planted out on 15th October, 1864. Here

there are 400 *succirubras* varying from 8 to 16 feet in height. Many are possessed of sufficient expanse of foliage to shield one from the rays of the sun. Around this are 600 seedlings, which were planted in May 1866, and these reach from five to seven feet in height. Here I saw a robust tree from which a strip of three feet of bark, and comprising a breadth of half the circumference of the stem, had been peeled off in October last. The lost bark had been perfectly restored under mossing. Cow manure, as applied by the natives in some parts of India for a similar purpose, will, Dr. Anderson thinks, do equally as well as moss. Straw has already been employed by Dr. Anderson, and he considers this preferable to mossing, on account of its greater durability. The renewed bark is called [illegible], and is of high commercial value on account of its great richness in the cinchona alkaloids. It is this process which renders barking apparently innocuous to the future growth of the cinchonas.

The *succirubra* cinchona, one of the most valuable of all the cinchonas, has also found a home on the Rungbee plantation. The first plants were put in the ground on 29th June, 1867. When planted, they were about six inches in height. At the end of May, they measured from 15½ to 20½ inches. There are also about 50 of the *cinchona calisaya* species at Rishap, and these promise to exceed even the extraordinary growth of the *succirubras* on this plantation. There are also 88 specimens progressing admirably at the Rayen plantation. Dr. Anderson possesses 4,658 stock plants of the *cinchona calisaya*. These yield, on an average, 2,500 cuttings *per mensem*. There are 15,000 robust plants in the nurseries, and planted out. I am particular in detailing these important facts, because I believe I am correct in stating, that nowhere in India has the *cinchona calisaya* found such a *congenial home* as in British Sikkim. According to Mr. Markham, (*vide* page 217, Cinchona Blue Book of 1866,) "*cinchona calisaya*, the most famous of all the American bark trees, and which in its native forests is alike the most beautiful and the richest in quinine, has not been a success in India. I was grieved to see the plants of this species only 5 feet 10 inches high, and 6½ inches in girth, at an age of three years, while their stunted and shrubby appearance with dim coloured leaves is as different as possible from that of the glorious *calisaya* of the Caravayan forest. This lamentation may, doubtless, have been justified from an inspection of the *calisayas* on the Neilgherries, when visited by Mr. Markham. I can testify, from careful personal observation, that the cultivation of the most famous of all the cinchona barks—*cinchona calisaya*—has been a perfect success under the management of Dr. Anderson, both at the Rungbee, Rishap, and Rayen plantations. The rapidity with which the plants laid hold of the soil, and of their subsequent growth, coupled with the extreme cleanness of the bark of the stems and twigs, and the luxuriant rich green colour of the leaves, shew plainly that Dr. Anderson has succeeded in discovering a home for this species, in no way differing, as to result, from "that of the glorious *calisaya* of the Caravayan forest." I earnestly trust that a similar display of judgment and scientific knowledge will yet succeed in finding an equally agreeable locality for the [illegible]—the Queen of the species—on the [illegible] Neilgherries.

2nd.—Crossing over to Rungbo, the Rishap plantation is entered. About 80 acres of this, more than a year old, is one of the finest sights anywhere to be seen. The plants average from three to five feet high, and there is not a single vacancy.

3rd.—Six miles further on is the Rayen plantation, also containing [illegible] acres, about a year old, and in a most flourishing condition.

The extent of open air cultivation cannot be better demonstrated than by the figures enumerated below :—

	No. of Plants.
Cinchona Succirubra ...	... 3,19,073
Cinchona Officinalis ..	... 1,91,419
Cinchona Micrantha ...	.. [illegible]
Cinchona Calisaya ..	... 220

(*To be continued.*)

INDIAN EXPERIENCE OF LITHOTRITY.

By Surgeon J. B. Scriven,

Principal, Lahore Medical School.

The old lateral operation of lithotomy is so time-hallowed a proceeding, that new means of removing stone from the bladder have always met with more or less opposition from the profession. The central operation, however, for small stones, the suprapubic for very large ones, and Dr. Murray's modification of the lateral operation, have been found applicable to a considerable number of cases.

In children, the cutting operations are attended with so little mortality, that scarcely any other proceeding is required. All, however, who have had much to do for the relief of stone, must be aware, from their own experience, of the fact that, whatever be its reasons, the mortality after lithotomy is principally among patients above the age of puberty, and that it is still higher above forty.

Furthermore, they cannot fail to have noticed a direct relation, modified by circumstances, between the mortality and the size of the stone; and, as very large stones are not commonly met with in childhood, and are most frequent in the old, the influence of age and great size of the stone often combine to render a cutting operation dangerous. Lithotrity has now been practised for many years by isolated Surgeons, and has succeeded well in the hands of a few, but has not yet met with general favour, even in England, still less in this country; the reasons of which, I doubt not, are the following :—

First.—That the operation, in most cases, requires to be repeated, instead of being completed at one sitting; so that cutting is very often the more rapid mode of cure; and it has very generally been believed that the accumulated dangers of all the operations necessary for crushing a stone are greater than those of the single operation of lithotomy. See a paper by Mr. Holmes Coote on Lithotomy and Lithotrity in Braithwait's Retrospect, Vol. LI, page 229.

Second.—That very few surgeons have good instruments.

Third.—That sufficient care has seldom been observed in the selection of cases, and in the manipulations.

Fourth.—That a very general idea has been prevalent, as formerly also existed with reference to lithotomy, that the operation cannot be performed without a considerable quantity of water in the bladder, which is impossible in a very large proportion of stone cases.

Fifth.—Because Lithotrity is considered by many to be applicable only to small stones, which are the very cases that are least dangerous for the cutting operation :—

Sixth.—As regards this country, because there exists a belief, in the minds of some Surgeons, that lithotrity is less applicable to natives of India than to Europeans. This is insisted on strongly both by Dr Greenhow and Dr Carter, who have drawn as a cause of the neglect of lithotrity in India, [illegible] only to the want of instruments, that the protraction of the treatment would be very distasteful to the natives. Many of these points have been fully argued by Sir Henry Thompson in the pages of the *Lancet*, as well as in his book on Prostatic Lithotomy and Lithotrity, that it might seem superfluous for me to touch upon them, were it not that my experience may be useful to those who are practising, like myself, amongst Asiatics.

To prove it equally so with Asiatics, further experience is

I believe, than those of any other hospital in this country. From the beginning of the year 1861 to the end of 1864, I

that I considered suitable, and 20 were so treated during that

away before the cure was completed, and must therefore be

died and two had to be lithotomised; of these two, one did well, the other left the hospital in a very precarious state from liver disease, a fortnight after the operation, and has not been heard

tinctly referable to the operation. The case that was afterwards lithotomised, but recovered, must be considered simply as a

to show, with two deaths and one failure. Twelve of these were operated on from 1861 to 1864 with very indifferent instru-

them very old men, I think it must be allowed that the mortality was not greater than might have been expected in an equal number of similar cases treated by lithotomy. All the female cases did well, but one left before the cure was complete. This

good instruments. Some Surgeons in England, at all events as

Lithotrite, which I know, from my own experience, is a most

why lithotrity is so little known, is truly stated by Dr. Greenhow to be, that Government has not provided instruments (see Indian Annals of Medical Science, No. XXII, page 4); and by Dr. Cutliffe, that very few Surgeons possess the necessary

mentioned were all operated on with one or other of these instruments. In L'Estrange's Lithotrite, the sliding blades, with which the stone was to be caught, were entirely separate from the screw, with which it was to be crushed. The latter was contained in a sort of box that had to be applied to the

detached again, when the sliding movement was necessary to catch a fresh piece. Thus considerable time was lost, and the operation unnecessarily prolonged, while the shaking and jerking of the instrument, in applying and detaching the box, and in screwing down the screw till it reached the head of the blades, often caused the stone to escape from the grasp of the instrument; to say nothing of the irritation caused by the movement of the stone and blades together in the bladder. Brodie's instrument was a trifle better; the screwing apparatus was attached to the head of the blades, but, as they worked quite independently, it was necessary to move the screw down, ever so far, before it began to crush, and to withdraw it again before

Both of these instruments had the disadvantage of having their blades fenestrated, thus being only adapted for breaking which is the object of the modern operation.

the stone between their blades; and, from the clumsy formation of the latter, there was considerable danger of injuring the coats of the bladder. Without attempting to describe Sir

mention that they are designed for obviating all the above inconveniences; not only are the screwing and sliding movements contained in the same apparatus, but the one is substi-

movement, is at once crushed by a screwing power, which, in its

have one instrument fenestrated, for hard large stones, to be used in the first, and, in some cases, in the second and third operations, in order to break the stone into angular fragments. In after operations, or in the case of soft stones from the very

considerable quantities of calculous matter may be withdrawn between the blades at each setting. Both the fenestrated and flat bladed instruments are so constructed, that any injury to the coats of the bladder is exceedingly rare.

touch hereafter on the largest size to which it is applicable).

case, an ounce of urine; and that, with the old instruments, it was impossible, except with two or three ounces. Now it has probably failed sometimes, because it has been tried with very large stones, more often, perhaps, because it has been attempted, with bad instruments, in cases in which the irritability of the bladder was great. Also, I doubt not, it has failed from rough contact of the instrument with the coats of the bladder, from laceration of the coats, and from too lengthened manipulations; much of which it was, of course, impossible to avoid in the old instruments, as will be described.

Lithotrity has doubtless often been rejected, because it has been found that the bladder could not hold more than an ounce or so of urine; and with the old instruments this was a valid

bladder is empty.

Often, again, lithotrity has failed from endeavouring to inject

that already, with difficulty, held an ounce, thus rendering it ten times more irritable, and producing an excessive desire to micturate, during which crushing is impossible. So essential was injection of the bladder, previous to crushing, considered

French Surgeon invented an ingenious Lithotrite, with a canal in the centre, so that the injection and the crushing might

only unnecessary, but positively injurious. It has not been

school hospital.

Previous to the

Lithotrites, I had some

stones of considerable size to deal with, but, as these instruments were not graduated, I had no very ready means of recording their sizes accurately. In the year 1867, the stones that I crushed were not of very large size. I had then just begun to work with Sir H. Thompson's instruments, and, being anxious to avoid failure at the commencement, I adopted the crushing operation only in those cases in which success seemed tolerably certain. This year, having acquired some experience from the five cases treated in 1867, and having attained a certain amount of dexterity in the manipulation, I determined to try the operation upon something larger, as soon as a suitable case should present itself. Sir H. Thompson says in the *Lancet* of October 26th, 1867, p. 512 —"Supposing that a uric acid stone of about 1½ inch in the long diameter is met with, and all the conditions are tolerably favourable, there is no doubt that lithotrity may be performed with a good chance of success." He allows that a stone of two inches may be crushed, but, as a rule, he thinks lithotomy the safer operation of the two. Again, he says in the *Lancet* of April 27th, 1868, p. 522,—"A stone which is two inches in diameter, either phosphatic or uric acid, had perhaps better be cut. No doubt, a rather large phosphatic stone may be crushed."

The three following cases are interesting, inasmuch as it will appear that the first was a phosphatic stone of 2⅛ inches in its long diameter, and the second and third were uric acid stones of two inches in their long diameters. Of the accuracy of the measurements, as I am about to give them in the detail of the cases, there can be no doubt, for the Lithotrites are graduated up to an inch and a half, divided into eighths. For measurements beyond an inch and a half, I was, of course, guided by my eyes only, which was not difficult, as I had the graduated part for comparison. Here I may remark that the graduation of the instrument up to an inch and a half obviously implies that it is not likely that an attempt would be made to crush a stone beyond this diameter. The measurements were taken down, each time, by my clinical assistants, at the bedside, from my dictation, each time the stone was caught: and, as an evidence of correctness, or for verification of the facts, I give references to my case books in the hospital, where the notes will be found.

CASE I.

Jaga, (Hospital Register No. 5, p. 519,) a Mahomedan male, aged 30, stone phosphatic. The stone was first caught on January 11th, 1868, with the flat bladed Lithotrite. The first diameter noted was ⅝ inch. In this it was crushed, and found soft. Another piece was instantly caught, 1¼ inch in diameter, and a third piece, also 1¼ inch. That was all for this sitting. It will be observed that the first diameter was smaller than the two others. The explanation of this, I think, is, that the stone was first caught in its small diameter, then broken into two, and that the two pieces of the same size, afterwards caught, were the two halves in their long diameter, the sum of which is 2½ inches. This man was operated upon six times, at intervals varying from five to ten days. The last operation was on the 14*th of February*. He was detained in hospital until March 4th, in consequence of an attack of orchitis, and some remaining catarrhal inflammation of the bladder. At the time of his discharge, the bladder remained slightly irritable, but he was very carefully examined several times, and no remaining fragment of stone could be detected. Moreover, he could run, jump, and perform any active exercise without the least inconvenience. He showed himself again at the hospital on the 11th, and reported himself well.

CASE II.

Natha, aged 35, a Mahomedan male, (Hospital Register No. 11, page 17). This man's stone was a uric acid one, ascertained by the acid condition of the urine, and a deposit in it of uric acid crystals. The first crushing was on March 1st, by means of the fenestrated Lithotrite. The first diameter, in which the stone was caught, was two inches, probably the longest, as it had been measured on a previous occasion, and found to be of smaller size than this. It was considered desirable to catch it in a shorter diameter for the crushing. It was therefore seized a second time, and one inch and a half was the diameter noted. It was crushed four times at this sitting. This man was operated upon 17 times, the last operation being on May 22nd. He was discharged on May 31st. So great was the hardness of this man's stone, that one of Weiss's best instruments was slightly bent in crushing it. At the time of his discharge, no remaining stone could be detected, nor was there any irritability of the bladder. He could run, jump, and perform any active exercise without inconvenience. With the exception of slight attacks of fever, this man had no unfavorable symptoms during the whole time of the treatment.

CASE III.

Malawa, aged 35, (Hospital Register No. 11, page 84). A Hindoo male. The stone was uric acid, ascertained, as in the last case, by the acid reaction of the urine, and a deposit in it of uric acid crystals. The first crushing was on March 31st, 1868, by means of the fenestrated instrument. The stone was caught, and diameter of two inches noted on the instrument. It was released from the grasp of the Lithotrite in the hope of catching it in a smaller diameter. The next diameter, however, was only slightly smaller, 1⅞ inch. In this it was crushed, and two more pieces were also crushed at this sitting, each ⅞ inch. This man was operated upon 15 times, the last operation being on May 29th. He was kept in hospital until June 6th, in order to be sure that no stone remained; but, during this period, after the most careful examination, none was found. On his discharge, he had still very slight pain in making water, but only did so about four times a day. He had no inconvenience, whatever, in walking about, but was not quite strong enough for the test of running or jumping. From the hardness of this man's calculus, it was found necessary to use the fenestrated Lithotrite six times out of the 15 operations.

Here, then, we have three cases, in succession, of which the calculi certainly come within the category of large stones, successfully treated by the crushing operation. I think it will be found, by any Surgeon in this country, who has a large practice in lithotomy, that a great proportion of the stones extracted from adults exceed, in their long diameter, an inch and a half; but that those exceeding two inches are exceptional. Hence it follows that, to make lithotrity extensively useful, it should be made applicable to stones of about two inches, as well as to smaller ones. There is a great tendency amongst the natives of India to neglect the early symptoms, and to try all kinds of empirical remedies for years, until the disease becomes unbearable, when, at last, they present themselves at the hospital. I imagine many years will elapse before the benefit of crushing a stone in its early stage is generally appreciated.

I am perfectly aware that no very important deductions can be drawn from three cases, but still they are sufficient to prove that lithotrity is sometimes applicable to large stones, and to encourage the hope that the dangers of a cutting operation may, as lithotrity becomes more generally understood, be avoided in the vast majority of cases.

This brings me to the sixth and last objection, *Lithotrity less applicable to the natives of India than to Europeans, the contraction of the treatment distasteful to them.* To the first part of this objection, "Lithotrity less applicable," &c., &c., no positive answer can yet be given, although it is obvious, from the foregoing facts, that lithotrity is useful in many instances. Should further experience prove that lithotrity habitually succeeds in this country in cases such as those just related, this would show a somewhat greater tolerance of the manipulation amongst natives of India than amongst Europeans. As

is a choice of treatment between cutting and other modes of

the latter; and that, if other dangers are substituted, they are

CHOLERA.

By [illegible], M.B.

In the April number of the *Indian Medical Gazette* I ven-
cholera, which I had found eminently successful in reducing the ordinary mortality during that condition. At the close

I am now able to place on record, with his permission, the results of the experience of another profes-
during the late epidemic months, of testing the value of calomel, in large doses, with cantharides, prescribed in the way that I recommended; and, I believe, I am justified in stating that he considers it the most effectual treatment of collapse in cholera with which the profession is acquainted. Many of the cases were in an advanced stage before he was called upon
There are some remedies which are effective in some other epidemics, or at some other period of the one in which they were once so successful, they are quite inoperative. But those who test this system, must do it *thoroughly* and
of calomel) producing dysentery;" and another, "violent salivation would be sure to follow." Truly, no doubt, both sequences would result, if measures were not taken to remove the calomel from the intestinal canal, after it had done its
who have used the mineral in this guarded way, there has been no dysentery of any consequence; and what salivation has occurred has, in the exceptional instances, been slight, and yielded readily to treatment; and even, if more or less excessive salivation *did* always ensue, it is a better alternative on the one hand, than almost certain death on the other. Dr. Macnamara is in the habit of giving chloroform freely and
power, and prevents that restlessness—so agonizing to witness—which assists in wearing the patient out. In his hands it certainly appears to be eminently successful.

He bears testimony to the excellent effects of cantharides, which completely *drains* the vessels of the kidney of their contents, and stimulates them to increased action, without

No.	[illegible]	Date of Admission.	Number of [illegible] Treatment.	Result.	Treatment.	Remarks.
1	[illegible]	[illegible] May		Recovered	[illegible]	It will be observed that 40 cases
	[illegible]	8th ,,		Ditto		
	Ditto	5th ,,		[illegible]		
	[illegible]	7th ,,		[illegible]		
6	Ditto	12th ,,		Ditto		
	Ditto	12th ,,		Ditto		
	[illegible]	[illegible] ,,		[illegible]		
	[illegible]	[illegible] ,,		Ditto		
	[illegible]	[illegible] ,,		[illegible]		
	[illegible]	[illegible] ,,		Ditto		
	[illegible]	[illegible] ,,		[illegible]		
	[illegible]	25th ,,		Ditto		
	Ditto	28th ,,		Ditto		
	Ditto	[illegible] ,,		[illegible]		
	[illegible]	[illegible] ,,		Ditto		
	[illegible]	[illegible] ,,		Ditto		
	[illegible]	8th ,,		Ditto		
	[illegible]	[illegible] ,,		Ditto		
	Ditto	[illegible] ,,		Ditto		
	[illegible]	18th ,,		Ditto		
2	Ditto	[illegible] ,,		Ditto		
	[illegible]	19th ,,		[illegible]		
	[illegible]	[illegible] ,,		Ditto		
	[illegible]	[illegible] ,,		Ditto		
	European	[illegible] ,,		Ditto		
	[illegible]	[illegible] ,,		Ditto		
	Native	23rd April		Ditto		
			Table of Deaths.			
	[illegible]	[illegible]	12	Died		
	[illegible]	20th ,,	24	[illegible]		
1	Native	10th May ,,	3	Ditto		
	Ditto	[illegible] ,,	6	Ditto		
	[illegible]	[illegible] ,,	8	Ditto		
	[illegible]	[illegible] ,,	12	[illegible]		
	Ditto	[illegible] ,,	14	Ditto		
	Ditto	22nd ,,	1	[illegible]		
	[illegible]	24th ,, ,,	1	[illegible]		
2	[illegible]	[illegible] ,,	2	[illegible]		
	[illegible]	[illegible] ,,	[illegible]	[illegible]		
	European	[illegible] ,,	were admitted "moribund." The record of [illegible] mislaid.	[illegible]		
	[illegible]	[illegible] ,,	[illegible]	[illegible]		
14	[illegible]	[illegible] ,,	[illegible]	[illegible]		

POISON IN MILK.

By Charles R. Francis, M.B.

In the *Indian Medical Gazette* of the 1st June last, I read the question whether, although the poison of serpent's might be swallowed into the stomach with impunity,—the milk of an animal that had been bitten would be equally innocuous? I adduced the evidence of two intelligent, trustworthy natives of Calcutta, which appeared to show that such milk could be *swallowed* with impunity. An instance in support of the truth of this view has recently occurred in the family of a European gentleman residing at a station in Eastern Bengal. The facts, which have been kindly placed at my disposal by my friend Dr. Fayrer, are as follows:—

Early in the present month, (July), at 7 A. M., a fine "up-country" goat, belonging to the family, was milked by the gentleman's wife. It had been observed that the udder and teats of the goat were unusually distended, and that the servant who attempted to draw the milk did not do it well. The lady, therefore, drew it herself. The milk from one teat flowed *thicker* than that drawn from the other. This was attributed to the fact of the kid having, probably, been kept away too long from the mother. The general health of the goat appeared to be very good.

The whole of this milk was set aside for the family breakfast, being intended especially to be mixed with the *tea*. Boiled cow's milk was also set aside for the coffee. At 8-30 A. M. the family breakfasted. The party consisted of the gentleman, his wife, and two children, another gentleman—a friend aged 23—being added to it. At the commencement of breakfast, the lady gave the eldest of the two children—a boy three years old—a cup full of the *goat's* milk. At 9-15 A. M., or three-quarters of an hour afterwards, the child vomited, and brought up, apparently, the whole of his breakfast. Presently, he lay down, and now the vomiting was very violent, and continuous. In the intervals between the attacks, the poor little fellow lay very quiet, and, in another hour, his appearance had changed greatly,—dark rings having formed around the eyes, which were rolled up under the upper-lids, the complexion becoming very yellow, and the expression anxious. The vomiting was persistent throughout the morning, and at 2 P. M. *diarrhœa* supervened, the evacuations being *very* thin and of a black colour. Both the vomiting and diarrhœa continued till 4 P. M., when they subsided. The former returned at night, and continued for 36 hours. The child was more or less ill for upwards of 96 hours altogether, when the symptoms subsided entirely, and he was ravenous for food!

The lady and the friend drank both coffee and tea, *each* therefore partaking of the *goat's milk*. At 9-45 A. M., whilst she was attending upon her sick child, the former experienced a sensation of nausea, and, in a few minute's afterwards, vomited, felt very ill, and lay down. The vomiting appears to have continued, more or less, throughout the morning, and was followed, as in the case of the child, by diarrhœa of the same nature. The vomiting was very severe; so much so, that at length she brought up a considerable quantity of pure blood. There was no change in the countenance, as in that of the little boy: and at 4 P. M. (just when the child's symptoms subsided) the diarrhœa ceased; but the vomiting continued through the night. The lady recovered in 96 hours.

The friend went out on horseback immediately after breakfast, but returned at 10-15 A. M., saying that he felt very ill, and immediately afterwards vomited. The same train of symptoms appeared in this case likewise,—continuous vomiting, and the supervention of diarrhœa at 2 P. M., continuing till 4 P. M. The friend recovered in 48 hours.

[illegible] breakfast; *and he continued well.*

[illegible]

When the friend returned from his ride complaining of illness,—thus making a third who had complained and suffered in the same way,—a suspicion naturally arose that there was something wrong with the milk drawn from the goat. Prior to this, cholera had been suspected. The goat was, therefore, examined, and the mark of what, like that from a poison fangs of a snake, was found on one of the teats close to its extremity. The udder was much inflamed. At this time, (about 10-30 A. M.,) the animal seemed to be very ill, and rapidly became worse. At noon it [illegible] from the mouth, and at 2 P. M. she died.

The goat had evidently been bitten by a poisonous serpent, and its milk poisoned all who partook of it. The entire history points to this fact. I am not aware that anything of the kind is on record; though, *now*, confirmed as the statement of my native friends has been by other independent witnesses, I have no doubt that similar instances *have occurred*. So pathologically important (as well as simply interesting) is the fact of milk into which the essence—as it were—of a serpent's venom has been, by a vital process, secreted, being capable of poisoning when swallowed into a healthy stomach, whilst the venom itself may be swallowed, freely, with impunity, that I trust more observers will give to the profession the benefit of their experience,—and that professional men (or others) will carry out the experiments which I suggested in the June number of the *Indian Medical Gazette*.

In the case which is here recorded, there is apparently no source of fallacy *whatever*. The goat was evidently poisoned by a venomous serpent, as the mark of the fangs was seen, and the animal died in a way that results from such a cause. Then, those only who drank the goat's milk suffered; and with all the symptoms, too, of snake poisoning. The poison of venomous serpents is allied to the acrid vegetables, (which produce vomiting and purging,) in their action. The more remote effect—*viz.*, that on the centre of the nervous system, which is seen after a bite from the venomous serpents of hot climates, the cobra for example, was observed in the child, who was *inclined to be lethargic* besides. Again, the individual who took the most milk was the principal sufferer. In the face of this sequence of events, it seems idle to talk of the possibility of the milk becoming deteriorated from "*standing*" at this season of the year, or of the possibility of there being abrasions in each of the stomachs of those who swallowed it. The fact must, I think, be admitted; and it remains, therefore, to elicit instruction from the lesson which it teaches.

(1.) Milk is consumed in every house; and the animals from whom we derive it are often exposed to the bites of venomous serpents. When out at pasture, of course, it would be difficult to adopt any sufficiently efficacious measures for the purpose of keeping these reptiles at a distance, beyond grazing the kids or cows as much in open ground as possible. But it may be well to use *carbolic acid* in our *homesteads*, in the immediate neighbourhood of the cattle stalls or sheds, sprinkling it about freely. Mr. Clark's and Dr. Fayrer's experiments have satisfactorily proved the deadly effect which this agent has upon these reptiles. They shun either it or creasote, and will not go where these compounds exist.

(2.) We have now before us further evidence of the fact that animal (human) milk may be a vehicle for the conveyance of the most virulent poison oftener than we are aware of. Should we not then be, more than ever, particular in selecting the *daces** whom we employ to nurse our children? Themselves impregnated, it may be, with the unseen and unsuspected taint of *leprosy*, the milk which is intended to [illegible] may carry with it the germs of that malady,—to be developed in after years, a melancholy [illegible]

were better, though those most affected had very little sight.

over uninterrupted snow, and during the day the same treatment was repeated, and by the fourth day all were nearly well again, though in one of my servants, a Hindu, slight inflammation, with much intolerance of light, and dimness of vision remained for four or five days longer.

said of one of the human beings. At nearly all the villages I afterwards passed through, I saw bad cases of chronic ophthalmia, all the result of exposure to the snow, and most of them dating

the conjunctiva and thickening of the lids, and roughness of their conjunctival surface, and consequent haziness of the cornea,

ophthalmia with thickening and inversion of the lids, and sequent blindness, have their origin in neglected snow-ophthalmia.

so great, as to render the unfortunate man perfectly helpless and unable to proceed on his way, and thus many lives are lost.

some people fortunately passed by and helped him on his way but he had in the meantime lost nearly all his fingers.

tense glare from a white surface, unduly irritating and exciting

manifesting itself by inflammation in the structures connected with the ocular apparatus.

Even where there is no sunshine, long exposure to newly-

less degree, as the glare from a large snow surface is always very great.

The best preventive measures are the wearing of coloured glass spectacles of a neutral tint, which is much better than blue, and the sides protected by wire gauze. A veil of green gauze over

of some of the passes, where breathing is so difficult, even the thinnest covering over the nose and mouth so impedes respira-

make very ingenious snow spectacles of platted horsehair, which protect the eyes, and at the same time permit vision, acting in the same way as the spectacles said to be worn by the Gree

rays of light to pass through. When the burning and aching sensation commences, which it often will do in spite of all protection, applying snow to the eyes gives great relief.

severity of the nervous symptoms, as pain, intolerance of light, loss of vision, &c., compared with the symptoms of vascular derangement, and occurring before there is any trace of congestion or swelling.

I regret being unable to describe the condition of the retina and internal structures of the eye in this disease, but I had not the means of making an examination.

AT the recommendation of the Secretary of State, the Madras Government have deputed Dr. Day, F.L.S.,F.Z.S., to institute practical enquiries, before and after the freshes, with a view to ascertaining definitely the extent of the influence, if any, exerted by anicuts on fresh-water fish in the Madras rivers. It has been apprehended by naturalists that those insurmountable obstructions to the progress of the young fish from the sea up the rivers must needs militate against reproduction, and as this is a question bearing on the food products of India, Sir Stafford Northcote has deemed it worthy of careful examination. Dr. Day will temporarily vacate the Medical Stores, and afford Dr. Bidie—who is rather boring the public with his unduly protracted investigation into the nature and habits of the coffee-borer—a good excuse for returning without delay to Madras.—*Inquirer.*

QUARANTINE regulations have been very properly put in force in the Jubbulpore district, as well as in the districts of Mundlah and Nursingpore. Temporary hospitals, under the charge of Native Doctors, have been established on the several roads leading to Jubbulpore, and travellers among whom cholera has made its appearance are detained for observation and treatment, if necessary.—*Ibid.*

DR. STOLITZCA, Palæontologist of the Geological Survey, and Mr. V. Ball, also of the same department, have been both appointed Joint Officiating Curators of the Indian Museum in Calcutta, in the place of Dr. Colles, resigned. The salary of the abovementioned officers has been fixed at Rs. 500 for the former, and Rs. 250 for the latter, Dr. Stolitzca being the responsible Curator.—*Ibid.*

AT the recent fair near Manikgunj, in the Dacca district, the corpses of many persons who had died of cholera were thrown into the tank which supplies the inhabitants with the whole of their drinking water. The Commissioner cites this fact as illustrative of the "apathy and indifference" of the natives in the most ordinary matters of hygiene and conservancy; but the Lieutenant-Governor of Bengal retorts that it seems to him quite as illustrative of the "apathy and indifference" *of the Police* and Civil Officers of Government.—*Ibid.*

Notices to Correspondents.

A[illegible]y. [illegible] *suggestion, as a means of preventing all* [illegible] *other social intercourse, that the glass panel in* [illegible] *with the penal sentence, which, he says,* [illegible] *immediately after the act. We do not* [illegible]

ENGINEER.—[illegible] *in charge of a second class road station, and drawing the authorized allowance of* Rs. 750 *per mensem. But the* [illegible] *per annum. The question, therefore, was whether I was to receive the forty per cent. of the Cash salary?*

I ought to mention that I am also in administrative charge of the Jail at my Station, and for this I draw Rs. 100 *a month. Of course, if the Jail* [illegible] *total will amount to* more *than my pay of rank.*

Answer.—*In the* 28 *para. of the Secretary of State's Despatch of the 7th No-*[illegible] *of* 23*rd December* 1864, *and the* [illegible] *the Local Service in Bengal, the pay had been fixed at* [illegible] *following Despatch No.* 152 *of* [illegible] *May* 1864, [illegible] *Public Works Department.' The* [illegible] *Regimental charges (G. O. G. G. No.* [illegible] *of* 1865, [illegible] *of the* 4*th April* 1867, *which explained the details of the allowances for* Civil charges, *was distinctly defined as being in* continuation *of G. O. G. G. No.* 1060 *of* 23*rd December* 1864, [illegible] *approximately applicable in the one case as in the other. We are not aware, however, of the question having ever yet been brought to a trial.*

We have received communications from

S[illegible] A. M. [illegible]SON. | [illegible] ASHLEY.
I[illegible]SON. | [illegible]
S[illegible] M[illegible]. | [illegible] HEATLY, [illegible]
A[illegible] KELLY. | S[illegible] [illegible] DAVIS.
A[illegible] [illegible]SON. | GHOSE.

Domestic Occurrence.

BIRTH.

FRANCIS.—*At Rochester, the wife of Surgeon-Major* C. E. FRANCIS, *of a son.*

The Indian Medical Gazette.

NOTICE.

All subscriptions will in future be acknowledged in the INDIAN MEDICAL GAZETTE, *instead of by letter post.*

Subscribers who have not remitted payment for 1868 *are solicited to do so.*

HARE STREET, Calcutta. } WYMAN BROS., *Proprietors.*

SPECIAL NOTICE.

It is particularly requested that Subscribers to the INDIAN MEDICAL GAZETTE *will notify to us* EVERY CHANGE OF ADDRESS.

HARE STREET, Calcutta. } WYMAN BROS., *Proprietors.*

It is particularly requested that all contributions to the "Indian Medical Gazette" may be written as legibly as possible, and only on one side of each sheet of paper.

To avoid disappointment, it is to be understood that no possible alterations can be made in printing them.

Notice of deaths and marriages must be brief.

Communications should be forwarded as early in the month as possible, and in every case should reach us before the 20th.

Business letters to be forwarded to the Publishers, Messrs. Wyman Bros.; and all professional communications to the Editor, direct.

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

HARE STREET, January, 1868. } WYMAN BROS., *Proprietors.*

"You [illegible] the [illegible] of public [illegible] [illegible] A[illegible] the [illegible] have [illegible] [illegible] [illegible]

interesting to Bengalees only. Our predecessors have endeavoured

In making the above promises, therefore, we do but follow in their steps: but, having the advantage of the above hint, which

foundation for the allegation.

We must request our contributors to be good enough to forward their communications on as early a date as possible after the beginning of a month, if they wish their contributions to be published in the *Gazette* of the month following. We have usually a press of material lying in our Editor's drawer,—often

a lengthy communication on an important subject, and one

August.

Regulations" will be added to the other matter in the "Yellow

time to time.

TO THE NEILGHERRIES AND BACK.

It is no small recommendation in favour of an Indian station prostrates the European in India so completely, and so suddenly,

respect, Calcutta and neighbouring stations are highly favoured. From thence, the best, in most cases, of *all* changes is available,

sea voyage to Australia, or even to England round the Cape.

or other of the hill sanataria in that Presidency. This combination of sea and mountain air may, or may not, be an advantage to an invalid, according to the nature of his ailments.

adviser;" for those in health it would generally be very beneficial.

Each of these hill sanataria has a different climate, and

ture than any of our Himalayan stations, if we except Almora

to some cases of phthisis. Ootacamund is, nevertheless, subject to all those variations of temperature (though they may be less than elsewhere) which are peculiar to elevated mountain

not alluded to under this last head. That form of the disease, now generally understood, and for a valuable account of which

seldom fatal, though occasionally very intractable, and frequently involving the necessity of the patient's return to the plains,

one or other of many causes, and discrimination must be

are required to prescribe is one likely to derive benefit, or

a general rule, that, in the majority of cases, the existence of diarrhœa contra-indicates a change of this kind. Where it

Neilgherry range, should be selected, in the first instance. Higher sites may be resorted to hereafter, according to circumstances. In former days, before the climatic effects of our mountain ranges

bowel complaints were sent promiscuously to the hills; and even in the present day it is not uncommon to meet with men

mendation of the "*Doctor*." It is felt that all that is required is *vigour*; and that a return of this will, with proper attention to

re-established by the oxygenating influence of mountain air.

a debilitated bowel, the weak point in the patient's constitution, to the risk of congestion, the foundation it may be of an attack

age—is available, is surely imprudent. *After* the diarrhœa has been subdued by a sea voyage of sufficient length, (that from Calcutta to Madras is scarcely sufficient,) then a residence in the hills may be of signal benefit. Unfortunately, the necessity

A striking case in point occurred within our own experience during the autumn of 1866. A young officer had been suffering from chronic dysentery in Bengal, and, after a certain period, evinced symptoms of improvement, which, however, were not very

rejoicing, for he had learned the "ins" to perfection. He was recommended to go to the Neilgherries, to particular stations specified, chiefly because the destructive diseases of those parts were unknown, and he selected the most fashionable and therefore—most crowded. Fortunately, he met an old friend, a surgeon with an H. M. Madras Presidency Surgeon, who succeeded in dissuading him from carrying out his unwise intention. Nay, he further advised him to return immediately to Calcutta, and proceed round the Cape to England. The young officer acted, however, after a residence of a few days in Madras, and contrary to further medical advice, to go to Bangalore, and thence to the Sanitaria here. It was on these hills that we found him. After a short residence, the symptoms of hepatitis, the diarrhœa which had succeeded the dysentery, seemed disposed to subside altogether; and he was even in a condition to assent to a higher elevation. But the improvement was only temporary. Dysentery recurred, with the symptoms of variation of temperature,—warm days followed by chilly evenings and cold nights,—and it became absolutely necessary that he should leave the hills at once, which he did, and proceeded to Madras *viâ* Bangalore. He was sent, eventually, to England.

It is remarkable that Dr. Baikie, a very careful observer, and who has had experience of the Neilgherries extending over many years, writes in favour of invalids suffering from dysentery resorting to these hills. It is true that he limits his recommendation to the "subacute case," in which, it seems, he does not consider that a preparatory sea voyage is necessary; and he wisely advocates a previous residence at Dimhutty, (a locality now abandoned as a residence for Europeans, near Kotegherry,) or Koonoor,—both warm situations,—until the disease should be fairly subdued, and the patient acclimatized, when he may be transferred to the more bracing climate of Ootacamund. In the severer forms of the disease, with or without hepatic complication, Dr. Baikie advocates [illegible] but, even in these cases, he sees no objection to a residence in the hills subsequently. We have lived much in hill climates in India, and held medical charge of a sanatarium in the Himalayas for two years; and our experience justifies us in thinking that in every form of dysentery, whether mild or severe, with or without hepatic complication, present or passed away, there is great risk in following Dr. Baikie's recommendations. A new-comer (in the youth of life) to India may indeed contract a dysentery which may necessitate a long sea voyage and a return to Europe, but from which he may eventually so completely recover that, *ceteris paribus*, he will have become, in manhood, a perfectly healthy subject. Such cases do not come within the meaning of a "weak point," though care should be especially enjoined. It is [illegible] suffered in many cases where residence in the hills should be interdicted. The same remarks apply to hepatic disease as to dysentery. A sad case, in illustration, came under our observation two years ago. A husband accompanied an invalid wife to Ootacamund in the month of May. He was, apparently, in perfect health, but a fact which was unknown to the family physician—he had been [illegible] *previous five years*. Shortly after his arrival at Ootacamund, he became uneasy in his right side, and dyspeptic. Diarrhœa shortly followed, and was regarded as a favourable sign. It was believed that an engorged liver had resulted in an increased flow of bile, and that thus the balance of the circulation would be restored. The patient did not, however, get well. He returned, in the course of a few weeks, to the plains, and, within a month afterwards, was sent to England, very ill with abscess of the liver, (of which he eventually died),—the diarrhœa still continuing. It is very probable that, in the course of one or other of the two attacks of dysentery, the liver had become involved, though there was no evidence on this point.

Before leaving this part of the subject, we would observe that more accurate information is required upon the subject of hill stations, generally, in all parts of India. Medical reports upon the sanataria where Europeans are quartered have, [illegible] been submitted to Government, and a [illegible] gives a condensed account of all where European troops are quartered, but something more is needed. The [illegible] of each hill station, as far as possible, should be made known. This is the more necessary now, there being so many medical officers attached to Her Majesty's British forces, to whom such information would be most acceptable. A [illegible] might be prepared from the records in the public medical offices, and supplied to each military and civil medical officer in the country. Under the present system, medical officers are very much in the dark as to the characters of the hill stations, even in their own presidency; and the choice is often left to the patient himself. This will depend upon circumstances. If he be fond of gaiety, or desirous of living under the eye of authority, with a view to ulterior advantages, he may select Mussoorie or Simla; whereas, possibly, the warmer climate and the lower elevation of Almora would suit his constitution (and, may be, his pocket too,) far better.

During the past few years we have enjoyed the opportunity of becoming acquainted with some of the hill stations in the Madras Presidency usually resorted to by invalids; and, as these are so accessible from Calcutta, and much frequented by residents in Bengal, we have thought it might be of service to give a sketch of each. We will preface our account by a few preliminary remarks on the *sea* part of the journey.

(To be continued.)

VACCINATION.

It affords us unmixed satisfaction to observe that Mr. John Strachey—one of the representatives of enlightened progress in India—has obtained permission to introduce a "Bill to make inoculation in Kumaon and Gurhwal penal." Fifteen years ago "Mahamurree," the local plague of those districts, [illegible] many years previously had led to the decimation of the people and to diminution of revenue, at length became so virulent, and so continuous, that the Government of the N. W. P. determined to, if possible, eradicate, or, at any rate, mitigate the severity of the disease. Two medical officers were appointed to investigate the true character of "Mahamurree," and to suggest remedial measures. They had been preceded in the enquiry by the then Superintending Surgeon of the Meerut Circle, Dr. Renny, who—although differing with them as to the name of the pestilence—recognized, as they did, the paramount necessity for introducing sanitary reform throughout the length and breadth of the entire hill country in those regions. The two medical officers were engaged for two

[illegible] the measures [illegible] Dr. Pearson [illegible] and [illegible] powers [illegible] was well fitted to take part in the introduction of such radical changes as the introduction of sanitary reform, for the first time, amongst an [illegible] population.

In the progress of the enquiry, the Government of the North-West Provinces availed itself of the machinery at its disposal to introduce vaccination. For many years the Bhootiyahs, or traders between Bhot, the country bordering upon Thibet, (not Bhootan,) and the lower hills had petitioned the Government to send them vaccine. They knew the value of it. These enterprising men would carry the products of Thibet not only to the lower hills, but to the large cities and towns in the plains, were it not for their dread of small-pox. The opportunity was [illegible] favourable. The Bhootiyahs accepted the gift with joy. The inhabitants of the middle and lower hills—offering here and there some opposition at first—eventually, in part, accepted it too. The school-masters of small-pox became vaccinators. Books, instructing these neophytes in their duty, and telling to the people the story of the prophylactic in the form of a tale, were published and became text books in the village schools. With a suitable climate and a willing population, the success and consequent spread of vaccination became a matter of certainty. The medical officers soon saw the wisdom of *disseminating* the virus in the hope of ultimately establishing a vaccine depôt in Kumaon and Gurhwal. They did not vaccinate all the population off at once, with a view to shewing a long roll of successful operations, but they set to work cautiously, and vaccinated sparsely, at stated and well considered intervals. Their most sanguine expectations have been realized. The vaccine of these hills—we say it advisedly—is the best in India. An excellent lymph is, indeed, imported now from England; but it will not vie with that from these districts. So, at any rate, think the medical officers who have tried both.

This being the case, inoculation with small-pox may fairly be made penal. Until an effective substitute could be depended upon, Government would not have been justified in stopping the old time-honored custom.

But now the day has arrived, and Mr. Strachey, we earnestly hope, will succeed in his endeavours to do away with a pest which is worse almost than cholera, or the plague. In [illegible] a punishable offence, shall we ever succeed in India in getting rid of it, and for thus compelling the inoculators to practise vaccination. These operators will be *forced* to practise with the new prophylactic. Nor will they suffer any hardship. The people who now pay them homage and money for their present work amongst them will, the more and more they are [illegible] of the efficacy of our specific, pay them the same when they become vaccinators. This is no chimerical fancy. The day is fast approaching when the Government may venture to make inoculation penal throughout the land. Let it [illegible] wherever vaccine lymph may be depended upon, as Bengal and the [illegible] in question, but act it at the same time strain every effort to *absorb the inoculators*,—encouraging them not only to take up the new system themselves, but to send their children to our colleges and schools to be [illegible] for the medical profession,—for a calling which will take them out of the *bap-dada ke dustoor** groove. It is well when the civil authorities and medical men are of one mind in matters of this sort. It will happen, occasionally, that a Magistrate is unwilling to adopt the recommendation of the Civil Surgeon, because he thinks the measure recommended will be oppressive. For some time past, the local authorities in Kumaon and Gurhwal have been unwilling to continue the prohibition to inoculate for small-pox, (which had been put in force believing it to be illegal,—and knowing also that many of the people (for it must be admitted that, in some parts of those districts, there is still great opposition to vaccination,) objected to it. In consequence of this, instructions were issued not to prosecute those who disobeyed the orders not to inoculate for small-pox. What was the result? An attempt to re-introduce it generally!

An excellent reason for now passing an Act, as adduced by Dr. Pearson, the Superintendent General of Vaccination in the North-Western Provinces, is that those hills are the *seed beds* from which these Provinces and other parts of India are supplied with good vaccine virus; and it is therefore urgently necessary to keep them untainted, and to exclude the possibility of the virus being injured by the admixture of small-pox.

In inexorable resolution, and severe wisdom, Mr. John Strachey is the Lycurgus of India.

INDIGENOUS DRUGS.

We are glad to observe that the fame of our native *Collaborateur* Baboo Kanny Lall Dey has found its way to the far-famed North of our boasted Western land of learning. A record of his labours, in developing the value of indigenous drugs in India, will be found in the pages of the *Edinburgh Medical Journal* for June last. Kanny Lall Dey requires no stimulus of this kind to pursue with zeal the honorable career of professional investigation. He is an indefatigable worker already. But we take this opportunity of saying once more what we have urged again and again to our idle Native friends, that their labours, if they will but work, will not become the prey of ruthless insects, as might have been the case in days gone by,—but that they individually may attain an enviable celebrity, not only here amongst their own *confrères*, but amongst the shining lights [illegible] on the other side of the globe.

Extracts.

Lord Napier stated at the Anniversary of the Madras Medical College, held on the 1st instant, that the Madras Government had [illegible] the construction of the Government [illegible] a new Female Lying Hospital, a Lock Hospital, a new Lunatic Asylum, an establishment for the instruction of trained Female Nurses, a Sanitary establishment [illegible] in lieu of the cholera one at Perambalore, and the re-organization of a Sanitary establishment throughout the Presidency. His Lordship remarked that he must not be understood as saying that all these schemes had received sanction [illegible] the Government of Madras proposes, and the Government of India the case.—*Western Times.*

* Ancestral.

WARRANT MEDICAL OFFICERS' WIDOWS' AND ORPHANS' FUND.

To the Members of the
Bengal Subordinate Medical Department.
(Through the Editor of the Lancet.)

Dear Sirs,—I have made some progress in the matter undertaken by me for our mutual benefit, having for its basis provisions for our families. Of the total number of appeals sent out by me among the *Warrant* members of the service with reference to my scheme, up to date I am in receipt of *about one hundred* votes from about *half* the number of Warrant Officers addressed by me.

A considerable number of my appeals have come back to me through the "Dead Letter" Office. On some, I find "refused;" on some, "not found;" on some, "dead;" on some, "declined;" on others, "Exchanged." From one Warrant Medical Officer it is my boast to record that I have received a note of a rich and a rare order. He tells me he is too old in the horns to be duped: that he is too much an adept to be caught by clouds,—thereby insinuating that my present project is to endeavour to make a *nice thing* out of my brother officers, forsooth! But I am quite philosopher enough to know that in all our shifts and walks through life we must expect to find the road strewn *here* with flowers, and *there* with thorns.

The Editor of the *Indian Medical Gazette* (a gentleman holding high official position, and who has always greatly interested himself in the interests of our Department) writes in his *Gazette* for June:—

"The Department has delayed taking action for the re-organization of a Widows' and Orphans' Fund, until its *position* should be finally determined. There is now no reason for delaying any longer. A portion of Mr. Tait's report, (his final opinion was withheld in the absence of further information which he required, and, we believe, of further payment.) together with some preliminary tables for calculating the probable amount of mortality and number of annuities, as prepared by Mr. Tait, (an actuary engaged in drawing up the rules for the Fund of eight years ago,) are with us, and we shall be happy to render any assistance in our power for the purpose of bringing the matter to an issue."

And again he writes:—"All subscriptions, of which a graduated scale will be necessary, should be made *compulsory;* AND WE BELIEVE THE GOVERNMENT WOULD—under the circumstances of the *failure* of the former fund, *for want of Government support*, and because THE COURT OF DIRECTORS HAD THEMSELVES—take the Fund under its own management. We would be glad to receive a draft embodying the regulations of the new scheme." The Editor of the *Indian Medical Gazette* further on again writes:—"The Subordinate Medical Widows' and Orphans' Fund in the Madras Presidency works well, and it should be taken for a guide." I have addressed the Secretary of that Institution, begging he would do me the favour to furnish me with the latest Audit Report of that Fund, and the most recently published pamphlet regarding its working, and the details thereof. Aided by such information, I hope to experience no difficulty in framing a rough draft of a scheme for the organization of our Fund, which I shall transmit to the Editor of the *Indian Medical Gazette* for publication or reviewal.

That the Editor of the *Indian Medical Gazette* plainly thinks, as I do myself, that we *should* to have among our body a Widows' and Orphans' Fund, you may see from what he here says:—"The cause of the widows and orphans of the Subordinate Medical Department has our liveliest sympathy. It was with great grief that we saw, a few years ago, what might have been the [illegible] Fund liquidated away to those who remained of the subscribers to the old one."

True, Government in its new Warrant for our service gives to our *Widows* a small pension; and indeed I regret to have to write that some of my *[illegible]* have addressed me to the effect that they thought it sufficient! Government, in drawing up the scale, never did convince themselves, I am certain, that the allowance to be given to widows of our service would, *of [illegible]*

You may urge that you have your money in Banks, or that you are a member of a Life Insurance Company. The one may say [illegible]

Provision made for a member or members of the family in a Pension Fund is not [illegible] provision made for the same object by investing in a Policy of Insurance on life, which is a [illegible] the interest where [illegible] as annuity, and which ceases upon the amount of the required [illegible]

Funds. In a Pension Fund, however, the Fund itself becomes the Trustee for the pension subscribed for, and all obligations to relatives or friends become in consequence needless.

The letter has gone out more than [illegible] my last appeal to you on a subject that ought to be dear indeed to [illegible] If you [illegible] succeed: if you do not, it is but left for me to lament that I [illegible] and [illegible]

I am, Dear Sirs,
Yours [illegible]
SUB-MEDICUS.

Short Notices of Recent Books.

[illegible] Paper and Pencil Notes of Cases. By James Morris, M.D. London: Churchill.

We like the idea of a well stored "commonplace book" and a pleasant pocket companion which shall call the philosophy of the age to fathom to its lowest depths. The matter of irritability and its [illegible] the most complex [illegible] of the whole range of physiology. Why it is that certain parts of the frame are more irritable than others can hardly be explained, as Dr. Morris very naively admits, by any hypothesis of "nervous supply." Nor is it by any means a ready task to calculate the proper combination of general irritability of the body which we do not merely find without analysis, but learn. Dr. Morris does not attempt to lay a scientific analysis before his readers, and we are therefore hardly called upon to criticise the opinions which he very sketchily puts forward. His book will be found a pleasant companion by both professional and lay readers. To the former it will supply old ideas more systematically arranged than is the case in most popular works, whilst to the latter it will give ideas of an entirely new order. The latter, if not of a [illegible] of at least a [illegible] style, and fertile in apt quotations.

[illegible] Papers on the second series of Essays. Van Voorst. London, 1868.

A member of our profession has put together a number of moral essays which are of the emotional rather than the philosophic school, and which appeal to the *ego* of inner consciousness rather than to the material inferences which the [illegible] of what metaphysicians call the [illegible] would have to develope. "A Physician" is nothing if not a man of large-hearted and gentle Christian bearing, and whatever [illegible] readers may have, whether they be Comtists or Hegelians, they cannot fail to profit by his sound good sense and his honest, homely, kindly way of putting the every-day things of life before them. We commend this little book to the notice of our readers, young and old. They cannot read it without having some of the rough varnish of worldliness rubbed off, and a little of their softer nature exposed.

The Action, Uses, and Value of Opium in the treatment of [illegible] By S. B. Birch, M.D. London: Churchill. 1868. 2nd Edition.

Those who have faith in a panacea will find a treat in Dr. Birch's pages. The author has a profound faith in the ad-

[illegible] time.

The Medical Profession and Medical Practice. By E. H. Maunder, M.D., Queen's University, Professor of Anatomy to the Royal College of Surgeons, Ireland. Dublin: Farmin, 1868.

This is the essay which gained the prize of £400 established under the will of the late J. W. Carmichael. It is the essay which [illegible] Journals, the reason of the controversy being that Dr. Mapother is himself one of the Council whose duty it was to adjudicate on the prizes. Fiat justitia, it seems an ugly affair, but really it is not so. Dr. Mapother took no share in the election of the sub-committee to whom the essays were sent in; he carefully [illegible] attending the meetings; he informed no one of [illegible] and he took no part in the essay he won. The book is a pleasant sketch of the profession and its institutions, and is totally in accordance with the condition of Mr. Carmichael's legacy. Naturally, it deals more fully with Irish medical affairs than with others, and for this reason, while it does some slight injustice of omission to the Profession in England, it will delight the hearts of old Dublin men by its pleasant-running commentaries on the men and the schools which were once so dear to them. Dr. Mapother is inexhaustible in his support of facts, and he displays an aptness at quotation which [illegible] by mean literary hermaphrodite.

Electricity, Local and General, and Medical Electricity, its Theory, Nature, and Application to the Treatment of Disease. By Morrell Mackenzie, M.D. 2nd Edition. London: Churchill, 1868.

There is little to notice in this edition of Dr. Mackenzie's book, beyond the fact that it [illegible] of merit to the first issue. The method of applying the electric current is exceedingly ingenious, and will, we should think, be found very useful in practice. We must, however, object to the strange ambiguity with which the author expresses himself in reference to the form of electricity he employs. The reader is left completely in the dark as to whether Dr. Mackenzie employs the galvanic current pure and simple, or the induced current of the magneto-electric machine—in other words, whether galvanisation, as the Germans say, or Faradisation, has been employed. Indeed we are dumb-founded with astonishment at reading this declaration at the end of the author's introductory remarks:—"The source of electricity is not a matter of any importance. I find [illegible] magneto-electric machine is employed." Shades of Remak listen to that. We [illegible] as to [illegible] as to [illegible] as to

It is said that Mr. Gladstone will be made Chancellor of the University of Edinburgh. At all events, by many of the graduates his election would be regarded as an event of the greatest advantage to the University. Dr. Lyon Playfair has been mentioned as the future representative of the Scottish Universities. It will strike your readers, therefore, with no little surprise, to learn that Dr. Prosser James has "acceded to a request to come forward as a candidate." Dr. James is a graduate of St. Andrew's, and is one of the Physicians to the St. John's Hospital for diseases of the skin. I believe he is also London Editor of the *Medical Times and Gazette*, a journal which is remarkable for its great vitality.

The "Chemical Society" has completed its first session, and I think I may say a session of usefulness. It has not, however, turned out as its warmest projectors anticipated. It has been but a counterpart of the "Medical Society of London," rather than an association for the advancement of therapeutics. It is therefore greatly to be hoped that, in its next session, the members will make some effort to carry out the plan originally projected, and incorporate committees for the examination of cases of interest, and the investigation of the action of drugs. The committees of the "Medical and Chirurgical Society" move along at a snail's pace. The committee appointed to inquire into a report upon the condition of Electro-Therapeutics, though for some years at work, has not yet published any of its proceedings; and from what I heard the other day, is not likely to do so for a long time to come.

The *Queen's University in Ireland* is making a bold stand for representation in Parliament. On Monday last, a deputation of the graduates waited upon Mr. Disraeli and urged their views upon his attention. The deputation was introduced by the Bishop of Killaloe, and among the distinguished graduates was Dr. Mapother, the Professor of Anatomy and Physiology in the Royal College of Surgeons, Ireland. Mr. Disraeli gave the usual stereotyped reply, which it is the fate of so many deputations to receive. The matter was brought before the House of Commons last night by Mr. Chichester Fortescue, who proposed that, in future, the graduates of the Queen's University, nearly 1,000 in number, should be permitted to vote in the elections of the members for Trinity College. The motion gave rise to a spirited debate, but was negatived on division: 173 voting for, and 183 against. But the defeat has this advantage, it shews how large a body of legislators is in favor of extending suffrage to the Secular University.

The *Lancet* of the week before last, in an article of much ability, condemned the principle upon which the election of Fellows takes place at the College of Physicians. It concluded by regarding the Council as a Tory Club of most Bœotian type. Perhaps the language of the *Lancet* has been a little too violent. It must, however, be admitted that the minds of the Councillors, if guiltless of partiality, are not beyond the suspicion of bias. There cannot be the least doubt that young and undistinguished men are often elevated to the place of honour over the heads of earnest and eminent laborers in the field of science, whom the Council, for reasons best known to itself, persistently and determinedly ignore. The *British Medical Journal* takes the part of the College authorities, and in a leader, which if not dispassionate, is at least pungently satirical and epigrammatic, smiles at the somewhat excessive comments of its contemporary.

University College has just established a department for sick children. This is certainly a step in the right direction, and one which we should like to see imitated by similar institutions. The front of the north wing, which was formerly tenantable by the nurses and sisters, has been appropriated for the children. The beds have been divided as follows:—Dr. Harley, eight beds; Sir Henry Thompson, six; Mr. Berkeley Hill, four; and Dr. Hillier, two.

All the large provincial towns in England are taking into consideration the advisability of utilizing the provisions of the "Contagious Diseases Act." Birmingham especially is making a most energetic move in this direction. What is more surprising is that, in many localities, the clergy are giving the proposed scheme their warm support. This looks well, for it argues against the religious objections which have really been the most formidable stumbling blocks in the way of efficient legislation. A meeting of the friends and members of the "Association for extending the Contagious Diseases Act to the civil population" will be held on this day week, and as the chair will be taken by Sir Thomas Watson, we may expect a large attendance of the leading stars of our profession.

The *Lancet* of Saturday contains a very able letter from Dr. Hughes Bennett, of Edinburgh, on the subject now so much discussed—medical education. Dr. Bennett quite agrees with the opinions expressed by Dr. Parkes in his recently published pamphlet. He thinks that the practical should in all cases precede the systematic method of instruction. He disagrees with Dr. Parkes about remuneration, considering that teachers ought to be well remunerated for their services, and that so important an office as that of lecturer on a scientific subject should not be merely honorary. On the whole, he concurs in Dr. Parkes's opinion.

Progress of the Medical and Collateral Sciences.

The Cholera Fungus.—At a meeting of the Royal Microscopical Society of London on the 10th of June, Dr Thudichum read a very important paper on the cholera fungus of Professor Hallier. He endeavoured to prove by chemical and spectroscopical researches that cholera is solely due to certain changes of a certain constituent of which occur in the blood, and have no relation, save that of coincidence, with the fungi found in the discharges of cholera patients. It would be impossible to deal with Dr. Thudicum's arguments till his paper is published, as he promises it shall be, in a separate form. It is worthy of note, however, that a reaction is taking place among scientific men in England, and that the fungus theory is not likely to have it all its own way. In answers of replies to Dr. Grimm Mihaly, the Rev. J. M. Berkeley the highest authority on fungi in Europe, states that he has no faith in the theory of a cholera fungus. His answers were published in the *Gardener's Chronicle*, and through that circumstance have escaped the attention of medical men. The following is Mr. Berkeley's reply to one of Dr. Mihaly's queries:—"I cannot believe in Hallier's views of the connection of cholera with parasitic action. I am taking great pains to ascertain what are the rice parasites. I believe Hallier's notions to be entirely theoretical. That some cutaneous disorders arise from fungi is pretty certain; but there is nothing to shew that fevers, or other contagious or infectious disorders, arise from the same cause. It was supposed that aphthæ were produced by fungus: but I have examined diphtheria membranes in which there was no fungus."

The Physiological Action of "Substitution Compounds."—It is a fact in organic chemistry that in certain substances an organic radical may be substituted for an equivalent of hydrogen without altering the fundamental chemical properties of this substance. But it has been recently shewn by Drs. Fraser and Crum Brown of Edinburgh, that though the chemical constitution of the substance may not be materially altered, its physiological action is seriously changed. We have before referred to the remarkable series of researches in which those chemists demonstrated that, by substituting methyl for an hydrogen equivalent in the alkaloids morphia, brucia, strychnia, etc., they obtained compounds which, in doses containing a large quantity of the alkaloid, were nevertheless almost completely inert. Singularly enough, the same subject has been taken up by, and have given similar results to, MM. Jolyet and Cahours. The substance examined by these *savants* was *aniline*. Now aniline itself is known to be a powerful nervine medicine, having a very distinct stimulating action on the spinal cord, and which in large doses produces convulsions. By adding (by substitution) to the aniline radicals, as methyl, ethyl, and amyl, the French chemists obtained substances which were not only not productive of convulsions, but were powerful narcotics or paralysants. MM. Jolyet and Cahours' paper was brought before the French Academy on the first of June.

Relative Actions of Theine and Caffeine.—In the *Archives de Physiologie* for June, M. Lecoq, who has before written on the subject of theine, publishes some notes, in which he states that, contrary to the general supposition, caffeine and theine have not the same physiological actions. Firstly, he says, caffeine is at least twice as strong as theine. Theine, he says, produces convulsive movements of the limbs, which have not been noticed with caffeine. Both alkaloids excite the heart, and the respira-

not later than June 1st, 1869.

The Ciliary Muscle of Man.—The *Quarterly Journal of Science* gives an abstract of Herr F. E. recent memoir on the anatomy and function of the ciliary muscle. The author thinks he has advanced many facts in support of Helmholz's theory of accommodation. The following statements are, however, not readily intelligible to those who learnt that in the movement of accommodation, the stretching of the zonula leads to the *decrease* of the curvature of the anterior surface, and the consequent pushing forward of the middle and pupillary edge of the iris. It is quite take place by this curvature of the middle, because the mass of the lens cannot be changed, more or less. Consequently it is easy to understand the small decrease in the curvature of the posterior face of the lens, the mid-point of which never leaves its place, as well as the small retrocession of the outer edge of the iris, both which phenomena may be ascertained in the living ned, Professor Schultze considers, by his views, in conse- into, and run along, the ciliary muscle, whilst the exit of the blood through the veins is not in any way checked."

method an infallible and immediate cure for nearly all forms of headache. About two drachms of bisulphide of carbon are poured into a phial containing a plug of cotton wool, which against the skin of the temple, or behind the ear, and kept there for a few minutes. It gives rise to some smarting and redness,

M. Devergie's method of treatment for this affection. Even in cases which had been going on for several years, he found it effect a cure in a few days. A compress is steeped in solution of starch, bandage; great care must be used to avoid pressure. The bandage may be removed on the fourth or fifth day.

The Tactile Corpuscles in Man.—M. Charles paper in the *Comptes Rendus*, April 27th, in which he asserts the finger, the nervous tubule unquestionably runs up and forms a coil round the corpuscle. Some of the filaments penetrate the surface. He says this will be clear to any one who follows his method of manipulation. He first soaks the tissue in slightly acidulated water; then he adds strong nitric acid. This does not stain the corpuscle, but it brings out the nerves most distinctly, and of a markedly yellow colour.

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE POISON OF SNAKES.

By J. FAYRER, M.D.

Present: Dr. Fayrer, Dr. F. Stoliczka and Mr. V. Ball, Curators of the Indian Museum, and Mr. Scova.

EXPERIMENT No. 1.

August 6th, 1868.—At 12-13 p.m. a Cobra was bitten in two places, about six inches from the head, where the scales had been previously scraped off, and in the mouth, by a very large and powerful light-coloured spectacled cobra, 5 feet 6 inches in length. The bitten snake was then put into a separate box with the same gauze front, for observation. There could be no doubt in the case that the bites were severe, and that the poison was administered. At 2-30, when I left, the snake seemed to be unaffected. At 9 p.m. Mr. Scova reports that the bitten Cobra does not seem to be much affected.

2-30 p.m., 8th August, about 50 hours afterwards, this snake is apparently unaffected.

EXPERIMENT No. 2.

6th August.—A Bungarus Fasciatus, nearly full grown, was bitten by the same Cobra at 12-22 p.m., at about eight inches from the head. The snake was bitten twice, the Cobra took firm hold, and implanted the fangs deeply.

At 2-30, when I left, there was no change; the Bungarus remained unaffected. The Bungarus died at 7-30 p.m. of the 7th, about 29 hours after being bitten. At 1 p.m. of the 7th, he seemed well.

EXPERIMENT No. 3.

At 12-27 p.m., 6th August, an innocuous snake, Dendrophis, [illegible] beautifully marked with red spots along the side, was bitten by the same Cobra, about the middle of the body.

12-30.—Appears slightly affected and is sluggish. It does not try to make its escape so vigorously as it did.

12-53.—Sluggish, but, apparently, very slightly affected. The Cobra is apparently partially exhausted, as it had been made to bite two other snakes in two places, and in this forced biting much of the poison is lost.

12-54.—Bitten again, near the same spot, by a fresh and large black Cobra. It soon became very sluggish, but made no convulsive movements. It simply seemed to become paralyzed, and was dead at 1-8 p.m. Death occurred in 14 minutes after the second bite, in 41 minutes after the first bite. The effect of the poison on the harmless snakes seems, from this experiment, to be comparatively feeble and slow. The bitten snake was small and [illegible]. The Cobra was fresh and very powerful, and at least [illegible] feet long.

EXPERIMENT No. 4.

A Dryophis, (green tree snake,) about 3½ feet long, was bitten by the first mentioned large, light-coloured Cobra, in the middle of its body, at 12-28 p.m.

12-32.—Scarcely affected, rather sluggish; but it is combative, and attacks if approached. At 12-55 it was bitten again by the large black Cobra mentioned in Experiment No. 3. It rapidly became affected. Became very apathetic and sluggish. At 1-3 p.m. apparently nearly dead. At 1-4 dead.

This experiment, like No. 3, shews the effect of the Cobra poison on the innocuous snake. The Dryophis died in nine minutes after the second bite, in 39 minutes after the first bite. The first Cobra was evidently exhausted. The second was fresh and vigorous, having only once bitten the Dendrophis. I believe that, had it bitten a warm-blooded animal, of about the same strength as the Dendrophis, death would have occurred much more quickly. The Dryophis was twice the size of the Dendrophis, and, although it was bitten after it, died in a much shorter time. It was either more susceptible, or more deeply bitten.

EXPERIMENT No. 5.

A pariah dog was bitten in the thigh by a large and fresh black Cobra, at 12-37 p.m. Immediately afterwards, about 20 drops of a solution of strychnia, (of the strength of gr. i to 3i,) equal to ⅓rd of a grain, were injected with a hypodermic syringe into the same thigh.

12-39.—Tetanic twitchings of the limbs commenced, and gradually continued, becoming more intense, till, at 12-42, the animal was in a state of general tetanic spasm of all the muscles of the body. The ears were erected, the pupils dilated to excess, the body rigid, and the limbs extended in an intense state of tetanic convulsion.

12-43.—Dead. Spasm relaxed just before death.

In this case death occurred in six minutes, and was due entirely to tetanus. There was neither time nor opportunity for any manifestation of the effects of the snake-poison.

EXPERIMENT No. 6.

A pariah dog was bitten in the thigh by a powerful and fresh black Cobra, at 12-45. Immediately afterwards, about 15 drops of the strychnia solution were injected with the hypodermic syringe into the same thigh.

12-46.—Bitten leg partially paralyzed, and dragged. The dog ran across the room, the legs twitching violently.

At 12-47 it fell over in a state of rigid tetanic spasm.

12-48.—Every muscle in the body in a state of rigid spasm. But it was remarked that the bitten leg was not so much affected by spasm as the other leg. The paralyzing action of the snake-poison, apparently, so far counteracts the action of the strychnia.

12-50.—Spasm relaxed.

12-51.—Dead.

Death occurred, evidently from tetanus, in six minutes.

EXPERIMENT No. 7.

A full-grown male cat was bitten in the thigh, at 1-20 p.m., by a Daboia Russelli, about two-thirds grown, and, apparently, quite fresh and vigorous. Ten drops of a solution of strychnia, of the strength of gr. 1 to 3i, that is, ⅓th of a grain, were injected at 1-23 p.m.

1-24.—The bitten leg is partially paralyzed. The cat lies quietly, looking about it.

1-25.—Spasmodic twitchings began.

1-26.—Stretched out in a violent tetanic spasm. Pupils very widely dilated.

1-27.—Spasm relaxed. Dead. In this case the strychnia seemed rather to accelerate death than to improve the animal's condition. The action of the snake-poison had clearly commenced, but it was at once obscured by the symptoms of poisoning by strychnia, and the cat died in a state of complete tetanus. The strychnia was suggested as an antidote to snake-poison. These experiments do not support this theory.

EXPERIMENT No. 8.

A large Dhamin (Ptyas Mucosus,) was bitten by a fresh and powerful Cobra, at 12-53 p.m., about eight inches from the head, the scales having been previously scraped off, to ensure the penetration of the Cobra's fangs. Bitten also in the mouth, at 12-54, by the same Cobra.

At 1-8 p.m. still active.

1-10.—Appears slightly sluggish.

1-30.—Lively.

At 2-30, when I left, it was as well as ever.

On the 8th August I found it dead at 3-20 p.m., rather less than 25 hours after being bitten. It appeared to have partially recovered from its lethargy during the day, but relapsed and died. It had been in the cage for some time, and was well and active then (see Note to the Reader), and its death was due to the Cobra bite.

EXPERIMENT No. 9.

A very large and powerful Cobra, the same that bit in experiments 1, 2, 3, 4, had about 25 drops of the solution of strychnia (gr. i to 3i) injected into the anterior part of its body on the ventral aspect, at 1 p.m.

At 1-4 p.m. muscular twitchings began. The head seemed to be shrivelled up and contracted. The head was erect, and longitudinal folds formed in its skin.

At 1-4 p.m., in a state of violent tetanic spasm. The body set in short waves, as though it had been petrified in that condition, and the whole curved rigidly to one side.

1-6.—Continues in the same state, rigid as stone.

1-10.—Spasm relaxing, twitchings generally throughout the body and the head.

1-12.—The only sign of life, an occasional twitch.

Dead. 1-14.—Spasm relaxed.

EXPERIMENT No. 10.

A Cobra, about 4 feet long, was inoculated with 15 drops of Cobra poison, partly taken from another Cobra, partly from itself, at 1-56 p.m., at about 4 inches from the head.

At 1-58, twitching of head and neck when erect. Hood began to shrivel.

At 1-59, twisted itself up into a rigid series of coils, like a snake cast in metal, in which state I lifted it up with a stick and rolled it on the floor.

It remained in this condition, the head twitching.

At 2-25 the coils were unfolded, and it was quite dead.

The symptoms of poisoning here were more those of strychnia than snake-poison; and I cannot help thinking that such may possibly have been the fact. The same hypodermic syringe was used as in the other experiments, but, as it had been most carefully washed several times before the experiment, it is difficult to conceive how such can have been the case, unless a very small quantity had been left imbibed by the packing of the piston. As the result was so different to that of other inoculations of Cobras by Cobra poison, I cannot help suspecting this may have been the case, and it is sufficient to throw a doubt on the validity of the experiment. It would, however, prove the extreme susceptibility of the snake to the action of strychnia.

EXPERIMENT No. 11.

At 2 p.m., a large Cobra had about 15 drops of his own poison injected [illegible] Head. The needle was inserted in the ventral surface, and it is [illegible]

At 2-5 p.m. the snake was moving about, apparently unaffected.

2-10.—He was thought to appear rather sluggish.

2-30.—Apparently as vigorous as ever.

At 9 p.m. it was reported by Mr. Sceva that the Cobra was very sluggish, and likely to die.

At 12-30, 8th August, the Cobra still alive, and apparently not affected; nearly two days after the experiment.

EXPERIMENT No. 12.

At 2 p.m., a large Cobra had about 12 drops of poison, partly his own, partly from another Cobra, injected about 8 inches [illegible] But at 9 p.m. of the same date, Mr. Sceva reported that it [illegible] lethargic, until it was quite dead, but there was no convulsive movement and tetanic spasm.

It appears probable, to say the least of it, that death in this case was caused by the poison. It is possible that the needle may have penetrated the lung, or some large internal vessel, and that it caused death either by hæmorrhage or embolism. I had not an opportunity of examining the snake after death, and I cannot, therefore, regard the experiment as conclusive.

The [illegible] in these experiments were remarkably large and vigorous.

PRESENT: Dr. Fayrer, Dr. J. Ewart, Professor of Physiology, and Mr. Sceva, of the Indian Museum.

EXPERIMENT No. 13.

August 8th, 1868.—A full-grown Cobra had about 25 drops of fresh Cobra poison, taken from another snake immediately before the experiment was performed, injected by means of the hypodermic syringe into the body, at about 8 inches from the head.

At 12-50 the snake appeared unaffected in strength and activity, striking at anything that approached it; but it voided a large quantity of light brown fluid *per anum*.

On the 12th August it was still quite well.

At 2-30, when I left, it was as well as ever.

EXPERIMENT No. 14.

A half-grown fowl was bitten in the thigh by a Daboia Russelli at 1 p.m.

It fell over in violent convulsions, as it was placed on the ground, and in less than 90 seconds it was completely dead. This is the most rapid action of snake-poison I have yet known.

EXPERIMENT No. 15.

About half a drop of venom was with difficulty obtained from the same Daboia. These snakes, with their long mobile fangs, do not shed their poison into a shell or spoon covered with a leaf so readily as do the Cobras. This very small quantity of the venom was injected, by means of the hypodermic syringe, into the thigh of a half-grown fowl. At 12-2 p.m., when placed on the ground, it walked a few steps, as though nothing had happened. In about 80 seconds it suddenly fell backwards, and rolled over in violent convulsions. At 12-4-10, that is, in 130 seconds, it was dead. These two experiments shew the terribly deadly nature of the Daboia poison, and also the difference in its mode of action from that of the Cobra. In the one case death being preceded by violent convulsions, in the other by paralysis and lethargy.

The quantity of the poison inoculated [illegible] very small in both cases; for the snake did not imbed his fangs or shed a very large amount of poison; and in the second experiment, where the quantity was certainly not more than half a drop, part of that must have been absorbed by the padding of the piston, and a small part lost by adhering to the syringe, or by escape, owing to the piston not being absolutely air-tight. It is also worthy of notice that this is the same snake that has been used in former experiments, and that it has been in a cage now for some weeks. It appears that it and its companion have eaten some small frogs lately.

EXPERIMENT No. 16.

One drop of poison, taken from a spectacled Cobra, was [illegible] by means of the hypodermic syringe, into a fowl's thigh.

In fifty seconds it was walking about with that leg partially paralyzed. At 1-16 it was pecking at the punctured part; wings drooping. At 1-19 it sat down, head hanging, and supporting itself with the point of the beak resting on the ground, growing gradually more comatose, and generally paralyzed.

At 1-22 in the same state. One drop of the strychnia solution, about $\frac{1}{4}$th of a grain, was injected into the thigh. At 1-23½ it appeared quite paralyzed. When thrown from the hands to the ground, the wings involuntarily performed the movements of flying, and it alighted gently, but lay there perfectly motionless. At 1-25 tetanic twitchings of muscular system were apparent. At 1-26 general muscular quivering, and slight spasmodic extension of the legs. At 1-27½ dead. The contents of the cloaca were evacuated just before death. The action of the strychnia was apparent, but it did not in any way seem to ameliorate the condition induced by the Cobra poison.

The fowl was larger and stronger than those in the preceding experiments, and a full drop of poison was injected. Death did not occur for 13½ minutes, and the symptoms differed from those in the birds poisoned by the Daboia, whose more rapid death was preceded by violent convulsions.

EXPERIMENT No. 17.

A large pale-colored Cobra had 10 or 12 drops of freshly extracted Cobra poison injected into the anterior ventral aspect of the body, about 8 inches from the head, at 1-43 p.m.

At 2-30 the snake seemed unaffected. On the 12th August, at 5 p.m., the snake remained perfectly well.

EXPERIMENT No. 18.

A large pale-colored Cobra had ten drops, equal to $\frac{1}{4}$th of a grain, of a solution of strychnia injected into the anterior part of its body, near the head, at 1-50 p.m. At 10-52 tetanic twitchings commenced. At 10-53 it became rigidly fixed in undulating curves, with a general lateral curve of its entire length. The hood completely shrivelled up, and the head twisted to one side. In this spastic condition the snake was as rigid as a bar of wood. In 7½ minutes after the strychnia had been injected, the Cobra was quite dead; muscular twitchings had passed away just before death; rigidity remained for a short time after it.

The snake, notwithstanding its cold blood, is very susceptible to the poisonous effects of strychnia. The object of the experiment was not only to test the action of strychnia on the snake, but also to shew that the method of injecting the poison was an effective one, and that as the snake-poison was injected in precisely the same way, failure in its action could not be attributed to the mode of administration.

EXPERIMENT No. 19.

At 2-6 p.m. a full-grown Cobra had six drops of fresh Cobra poison injected under the skin with the hypodermic syringe, about 8 inches from the head.

Seven minutes after vorted a quantity of dark-colored fluid from the cloaca.

2-30.—Unaffected.

On the 12th, at 5 p.m., still quite well.

In these three experiments, 13, 17, 19, the Cobra poison, though fresh and thoroughly well injected into the Cobra, had no effect. Four days after the experiment, the snakes injected were unaffected. I am, however, still not satisfied that the Cobra may not be poisoned to death by the venom of its own species, and shall make further experiments before recording any decided opinion.

EXPERIMENT No. 20.

Ten drops of carbolic acid were injected, at 2-9 p.m., by means of the hypodermic syringe, into a Cobra, at about 8 or 10 inches from the head.

In half a minute it was affected with muscular twitchings and tremor; the anterior 12 inches of the snake affected with paralysis agitans.

Vermicular movements throughout the body.

2-12.—Universal paralysis.

2-14.—Dead.

The snake is evidently very susceptible to this poison, as it also is to the strychnia. No warm-blooded animal could be more so. This, I think, seems to shew that, apart from any immunity peculiar to the reptilian circulation, it has a special toleration of the poison of its own species; for it certainly is not easily, if at all, affected by it, as the majority of the experiments hitherto performed tend to shew that neither by inoculation of the poison by the syringe, nor by biting, is any deadly effect produced.

In my last report, in alluding to the poison fangs of different snakes, I described them simply as they appear, and not according to their development. But as this may be misunderstood, I would here remark that, though different in form and size, they are all developed on, and are modifications of, the same plan. The fang is a long tooth, consisting of dentine and pulp. This is folded on itself, and thus forms the poison duct, constituting a conical tube. The canal thus formed lies on the convex side of the fang, which is recurved, and is in front of the pulp. The poison canal is, in fact, enclosed in a circular canal of dentine, the fibres of which are arranged vertically around the duct.

This inflection or involution is more or less perfect according to the age of the tooth, or according to the genus of the snake. In some, as in the Hydrophidæ, the inflection is never completed, and the canal remains an open groove.

In the Elapidæ, as in the Naja and Bungarus—the involution is sufficient to close the canal, but the vertical line of union, as well as the triangular opening at the base, and that of exit near the apex, can be seen: whilst in the Viperidæ and Crotalidæ the involution is so complete, that the tooth presents the appearance of a perforated tube, and the inflection or involution of the margins is not seen.

These poison fangs, which are connected with the maxillary bones, are anchylosed to them when they are in working order. The supplementary fangs, of which there is always a good supply in different stages of growth, are loose, and lie covered by the fold of mucous membrane and gum which envelopes the poison fangs, and protects them when not in use. A second, or even third, fang may be anchylosed with the principal one to the maxillary bone; and I have before me a skull of a Daboia, for which I am indebted to Mr. Sceva, in which this is the case; and where there are five well developed poison fangs on each side, of which on one side *two* are anchylosed to the maxillary bone. The muscular apparatus by which the fangs are moved, the jaws opened, and the poison gland made to shed its contents through the hollowed tooth, are very complex and beautiful. I hope, on a future occasion, to give some account of this, as well as of the osseous details concerned in the movements by which the deadly wound is inflicted.

ON CHOLERA.—No IV.

BY C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

WE may now briefly consider the circumstances of rather an important epoch in the history of cholera, namely its appearance in Persia in 1821. I have already shewn that we have ample evidence to prove the existence of epidemic cholera on the western border of India throughout the years 1819 and 1820. In place, however, of supposing that the influence

impartial eye-witness of what occurred.

Mr. Fraser arrived at Muscat on the 8th of July, 1821, and epidemic cholera having visited Muscat, where it had committed greater part of Omaun." "It broke out spontaneously, first at Rooee, a village three or four miles from Muttra, without 18th of July we arrived at Kishen, where epidemic cholera find the disease still fiercer in that locality. The first case that occurred was in the person of a slave-girl in the house of the Sheikh, who could have had no communication with anyone from without." The disease had by this time also reached place for several days either with these places or Meenab." on the 29th it was heard of at Kazerun and Shiraz, in which latter place it first appeared in the Prince's Harem. The disease was very severe in this locality, and our author's companion, Mr. Rich, here died of cholera.

Mr. Fraser makes no further reference to the disease until he arrived at Tabreez in July, 1822. He then observes that it is "difficult to say how, or from whence, the epidemic cholera account, that could be depended on at all, could be obtained included the Persian army besieging Bagdad, but it was not gud of Semnheroon and reappeared in most of the places it in several of the sea-port towns on the Caspian; and in Sepshowed itself in the neighbourhood of Laodicia and Antioch, and then spread along the borders of the Mediterranean, but entirely disappeared again, both there and on the shores of the from this time up to the autumn of 1829.

It is certainly very remarkable that cholera should have been hanging about the territories bordering on the Levant for three years, with only a nominal quarantine to stop it, and ample spread into Turkey and Europe, if human intercourse were the ordinary means by which the disease were propagated.

From the proceedings of the Bengal Medical Board and less destructive in Bengal throughout the year 1821 than it had effect that "cholera had been very prevalent and fatal in particular spots" of the Berhampore circle; but, with this exception and the usual occurrence of sporadic cases at the Presidency and a few other localities, we hear nothing more of the disease.

cholera; in fact, the great epidemic which had arisen in 1817, well nigh covering Asia within the three succeeding years, had now subsided.† The disease was still generated throughout the year, in its endemic area, which we have thus far in our history seen, extended over the whole sea-board of British India, including Chittagong and the Delta of the Ganges, and which, as we shall subsequently discover, is by no means confined even to this enormous area. A fair criterion of the comparative death-rates from cholera, for the years 1818 1818 this force amounted to 69,416 men, and among these 896 casualties occurred from cholera; but in 1822, the force having increased to 85,517 men, only 369 deaths are recorded from this marked difference which exists between the death-rate from cholera among our European and Native troops in India, amounting to 21 per 1000 in the former, and to 10 per still greater contrast in the case of the troops serving in Bengal.

Throughout the early months of the year 1823, cholera was very prevalent in the Presidency, Cuttack, Sylhet, and the Midnapore Divisions, Beerbhoom and Balasore suffered severely during May.‡ At Dinapore "the greater number of cases appeared upon a sudden change of the weather;" but, with these exceptions, we have no evidence of epidemic cholera in or beyond the Delta of the Ganges.

In the Madras Presidency many stations were again entirely free from cholera;§ it broke out here and there, as, for instance, in the 34th Regiment, which was encamped at the of the excessive heat of the tents, and the great drinking attending the volunteering, a high degree of susceptibility to the disease was reproduced among the men, which appeared to be excited into a severe epidemical visitation by a slight change in the weather. At the same time the disease was not prevailing in the fixed troops at the station, nor anywhere in the neighbouring country, except in the 54th Regiment, just arrived in India, and in the 53rd on its march. While the disease was prevailing in the 34th, a party of volunteers left it for the depôt at Poonamalee, eight miles distant. In the course of a week after their arrival there, twenty cases occurred in that party, but not one in the various other parties of troops previously there, though they were all

mixed up together. The 53rd Regiment shortly after underwent their volunteering in the same neighbourhood and under the same circumstances with the 34th—of exposure to heat in camp and intoxication—yet escaped the disease. The 53rd had but two months before undergone a severe visitation, induced by marching and atmospheric influences, by which its susceptibility was exhausted, and the causes which proved so fatal to us were insufficient to reproduce it in them."*

In 1824 cholera was only generated to a slight extent beyond its endemic area. It broke out with considerable violence among the European Artillery and men of the 15th Regiment N. I. at Mhow, "the patients being attacked with vomiting and purging of a whitish-coloured watery fluid, the most awful collapse of the system ensuing, leaving but little time for the employment of remedies; there was nothing like reaction. The vital powers seemed completely exhausted by the first stroke. There were only three cases where anything like spasms appeared."† Concerning this outbreak of cholera, the Superintending Surgeon remarks—"The only troops of this division that have suffered from cholera were the 15th Native Infantry and European Artillery, which unfortunately passed on their route through the crowded and filthy cities of Indore and Oujein, while the dire disease was raging with great violence; whereas in Mhow, the station they had left, though only 12 miles distant from Indore, not a single case had occurred."‡

In the Jubbulpore district there was rather a severe, but short, outbreak of cholera in July; it did not affect the troops.

During the early months of the year 1825 we have a repetition of the old story—Cholera in Calcutta; the pilgrims at Pooree suffering severely, and the Government urgently called on to exert themselves in favour of these poor creatures. In April, May, and June reports were received from various districts in the Delta of the Ganges as to an increase in the number of cholera cases; from Ganjam and along the eastern seaboard a similar cry was raised, and later in the year from the western side of the peninsula at Mhow. Among the inhabitants of Calcutta and the city of Dacca, cholera was very prevalent again in August and September. Nevertheless, on the whole, India was comparatively free from the disease.

The following twelve months are of special interest with regard to the history of cholera, and I am almost entirely indebted for the information I have gained regarding this period to the reports and returns contained in the "Proceedings of the Medical Board." From these we shall find that the great epidemic, which spread over Europe and extended to America in 1830-31-32, arose in Bengal in 1826. This point has never, so far as I am aware, been insisted on. The cholera of 1830-31 is usually described as having originated in Astrachan, as follows:—"In 1823 it passed the Caspian Sea, and in the month of September showed itself in Astrachan. It made no further progress, however, in Europe until the year 1830. In that year, having appeared again at Astrachan in June and July, it extended rapidly through the eastern part of Europe."§ This account gives us but a very meagre idea of the origin of the great wave of epidemic cholera, upon the study of which we must now enter.

During the first quarter of 1826, cholera was evidently on the increase throughout the whole of Lower Bengal. Among the troops in the Presidency Circle, no less than 76 cases occurred in April, of these 38 died; but what is of more importance to notice is, that H. M.'s 31st Regiment at Dinapore was attacked by cholera in April, 1826, fifty-seven men having been seized with the disease, of these 23 died; and, at the same time, in the Regiment at Buxar, forty-nine men were affected with cholera, and twenty-nine died. From Dinapore, Dr. Dickson writes on the 4th of April 1826—"I am very sorry to report that cholera has again commenced its ravages at this station: the surrounding districts are, likewise, most severely affected."* The Superintending Surgeon at Benares, on the 13th of May, 1826, reports—"that, in the city of Benares, two or three hundred persons were daily carried off by cholera, and yet the troops and prisoners in the Jail remained entirely exempt from the disease, which, nevertheless, was most severe all over the Benares division." In the Cawnpore Circle, during the month of June, 64 European and 108 Native soldiers were attacked by the disease. We have clear evidence, therefore, of a most severe outburst of epidemic cholera, commencing early in 1826, throughout the whole of Lower Bengal, and gradually extending towards the north-west as far as the Cawnpore division, during the first six months of the year. Beyond this area, we hear of nothing approaching to an epidemic outbreak of cholera. The Saugor, Agra, Meerut, Kurnaul, and Nusseerabad divisions were absolutely free from the disease, with the exception of the usual sporadic cases which occurred there every season. Before the month of August cholera had subsided, but by no means disappeared, from Cawnpore eastward.

In November, 1826, we notice the first muttering of the storm from the west. The Superintending Surgeon of the Nusseerabad Division writes as follows:—"In the stations on the right banks of the Jumna, *viz.*, Delhi, Muttra, and Agra, the returns show that the Corps there have experienced, during the month, a slight *invasion* of cholera."

The above details are sufficient to give us an idea of the invading cholera of 1826; its steady advance from east to north-west as far as a line drawn about half-way between Cawnpore and Agra; its halting precisely as it had done in 1817, but apparently not invading Bundlecund (in the Nagpore Subsidiary Force the ratio of admissions to strength per 1000 for cholera was, in 1827, 0·605; in 1828, 1·120; in 1829, 1·517; and in 1830 there were no admissions at all); in other respects the phenomenon of the cholera of 1826 was an exact counterpart to that of 1817, and in all probability of 1783.

I would draw special attention to the observation of the Superintending Surgeon of the Nusseerabad Division as to the slight invasion of certain cities by cholera on the right bank of the Jumna, towards the close of the year 1826; the skirmishers, as it were, thrown forward by the invading power; the evidence of the potential force exercised by the disease in these localities.

Sir J. R. Martin remarks† "I served in the General Hospital Calcutta, in March, 1827, the time referred to by Mr. Twining, when the house was filled with cholera patients, and when all of us, Europeans and Natives, were exhausted with the labours of attending on the sick, but none of us suffered from the disease." Maulmain, Arracan, Chittagong, and the whole Delta of the Ganges were, during the first quarter of the year, under the influence of a severe outburst of cholera.

In May, 1827, Dr. Taylor writes to the Board from Agra, reporting that cholera "has prevailed, in an epidemic form, in all the villages within several miles round Agra; an immense number have fallen victims to its destructive influence." Dr. Skipton, from the same place, remarks that 23 cases of cholera

* See the Dispatch's account of the epidemic in the Transactions of the Medical and Physical Society of Calcutta, Vol. III., p. 420.

† [illegible] Lower Provinces, by Sir J. R. Martin, p. 7[illegible].

some 3,627 feet above the level of the sea, cholera broke out in

various year, although in a less severe form. The Central Provinces seem, however, to have escaped the invading cholera

described appear to be somewhat as follows:—We notice a vast increase of the disease in its endemic area, and during the first half of the year, its progressive generation towards the

followed by a gradual subsidence of the disease. During the second half of the year a few suspicious cases occurred beyond the invaded area, and in the same line of country.

Throughout the following twelve months cholera is reproduced over the entire area which had been affected in the previous year, and a simultaneous outburst of the disease

its onward course to the west and north-west.

in the localities we should have expected to meet with it in

communication:—"We regret to state that the greatest consternation prevails at Teheran in consequence of the appearance

Herat, through Khorasan, to the Persian capital. At the former

enjoyed any authority or importance, have fallen victims to the epidemic. His Majesty the Shah has left Teheran and retired to

were dispersing, in order, if possible, to escape the pestilence." Lieutenant Conolly also remarks that the "year before our

around."* Further than this, we hear of cholera having prevailed in 1829 "in the province of Khorasan, and likewise in various districts of Bokhara, above all in Chiva, a city of the

falls from the south into the sea of Aral,"† and being, therefore, almost exactly on my imaginary line from the Punjab north-west to Orenburgh

we find an increase of cholera over its endemic area, and its advance to the north, followed by an outbreak of the disease at Hurdwar during the succeeding year, "after a heavy fall of rain followed by an easterly wind."‡ In the second epidemic (1817-18), cholera raged over its entire endemic area, and advanced during the same year towards the north-west as far as to a line between Cawnpore and Agra. The following year it spread over the western, N. W. Provinces, and Punjab before earlier in the year, during the months of August, September, and November; it subsequently appeared in Persia. In the third epidemic we have traced precisely the same phenomena, and I would draw special attention to the fact, that not only the Himalayas, before the middle of June.

by it during the two previous years.

Presidency were less subjected to cholera than in 1828; the Superintending Surgeon of Dinapore reports its existence in some of the Jails in his Circle, but hardly in an epidemic

Vol. II, p. 5.

a tendency to subside more speedily than its predecessor of 1817-18. During the year 1826, some 503 cases of cholera occurred among the European troops, and in the General Hospital of this Presidency, in 1827 three were 812 cases, in 1828, 691, in 1829, 632, and in 1830, 277 cases.

(To be continued.)

NOTES ON CINCHONA CULTIVATION IN BRITISH SIKKIM (NEAR DARJEELING.)

(*Continued from Vol. III, No. 8, page* 179.)

BY JOSEPH EWART, M.D.,

Professor of Physiology, Medical College of Bengal.

Seeds have already been procured from the *cinchona succirubra* and *officinalis* species, and from these seeds excellent plants have been reared. The prosperity of the plantations is such that Dr. Anderson hopes to dispense with the present expensive system of artificial propagation by cuttings, and to extend the cultivation, to almost any extent, by means of seeds in 1869 for *cinchona officinalis*, and 1870 for *cinchona succirubra*. That this will be perfectly feasible, is manifest from the ease with which all the cinchonas under cultivation take root and grow, and also from the great productiveness of their fructification. Howard's analysis of the bark sent from Darjeeling further stamps the plantations as a complete success, as may be observed from the subjoined statement.

No. 1

Oldest *succirubra* bark from a tree cut down thirty-one months after planting.

DARJEELING.		OOTACAMUND.	
Quinine, cry-stallising freely as sulphate	3·29	Quinine, specimen of white sulph. sent	3·14
Cinchonidine, a little quinine	2·27	... ...	2·06
Cinchonine	0·82	... ...	0·80
	6·38		6·

This is a satisfactory return, and shews that the bark of *cinchona succirubra*, as cultivated at Darjeeling, is richer in the important alkaloids than that of a corresponding age grown on the Neilgherry plantations.

The estimated produce of bark for this year is 300lbs; that for 1869 not less than 3,000lbs. In September next there will be planted out from 700 to 800 acres, and by the end of 1870 the whole of the forest land cleared for cinchona cultivation, amounting to a total area of 1,500 or 2,000 acres, will be planted out.

The simplicity of cultivating cinchonas, as carried on at Darjeeling, is very striking. Propagation by cuttings from stock plants is effected with great rapidity. When the plants have been subjected to the hardening process, all that is needful is to place them in the soil by hand, no preliminary preparation being needed, excepting the marking out of the situation of each plant on the ground, from which the jungle has been thoroughly cleared and burnt, and the digging up of the soil to a depth of a foot or eighteen inches, and over a diameter of about 9 inches. The weather being favorable, a hole is made with the hand, the root of the plant placed in the same, and then surrounded with soil. No further precaution whatever is needed. There is no such thing as trenching—no surrounding of the young plants with bamboo or grass frameworks to protect them from frost and storms, and extreme sunshine, no stripping of the plants of all but their top leaves, to enable them to withstand the violence of the winds, as are found essentially necessary at the Neilgherry plantations. Neither is there any danger from wild animals. In fact, the only care is to see that the plants, after having been properly hardened, are carried out from the nurseries in dull, cloudy weather with slight showers. Heavy and prolonged rain, or much sunshine, is prejudicial to the plants newly put in the soil.

Labour is abundant—mainly derived from Nepaul. Men are procurable in almost any number at Rupees 6, women at Rupees 5, and boys at Rupees 4 *per mensem*.

The *Darjeeling Cinchona Association* is situated on the left bank of the Rungbee. One hundred and twenty acres are planted out with *cinchona succirubra*, and this looks very promising. The plants have not been in the open much more than a year, and they range from two to four feet in height. Mr. Munro is the Superintendent. He had no previous training, a fact which plainly shews that the propagation and cultivation of the cinchonas need very little of the cunning of the expert, as Mr. McIvor would induce us to believe. By the end of September, Mr. Munro will have a hundred and twenty acres more planted, making a total of 240 acres. Mr. Southby, the Manager of the *Selim Tea Association*, has 10,000 very thriving *succirubra* plants, a year old, on various parts of the estates. They vary from two to four feet in height. Mr. Graham, of *Takvar*, is also successfully prosecuting the cultivation of the cinchonas. When Dr. Anderson is able to distribute abundance of seed, and this he will be in a position to do in a year or two, then the cinchonas may be extended, in favorable localities and climates, in this country, with as much ease as potatoes or oats. Once in the ground congenial to them, the cinchonas are extremely tenacious of life. They bear mutilation with impunity, and, under mossing, they repair severe injuries with great rapidity by granulation and cicatrization. Nay, when cut down to the ground, they spring up as quickly and vigorously as willows.

The existing mode of rearing and propagating cinchonas, *now* rendered necessary owing to the dearth of seeds, is described as follows in Dr. Anderson's Report from 1st April 1865 to 31st March 1866 :—

"The progress of the open air plantation has been secured by separating a large number of plants of each species, as the stock from which the plants to form the plantation are procured. The cuttings of *cinchona succirubra* and *cinchona officinalis* now obtained, are grown solely for the purpose of planting in the open ground, and no cuttings are made from them. Thus, as healthy and vigorous plants are obtained as can ever be yielded by artificial propagation. The progress of the cultivation and advances made during the year will be understood by an account of the stages through which the plants pass before they are finally disposed of by planting in the permanent open air plantations. From the stock plants of each species which are planted in the soil in low, glazed wooden frames, a crop of cuttings is obtained monthly during the cold and dry periods of the year, and twice a month from May to October.

"These cuttings, prepared by a European gardener assisted by trained natives, are planted in shallow, well-drained wooden boxes in coarse sand; 150 cuttings are placed in each box. These boxes fit closely into a wooden frame with glazed lights, in every respect like a cucumber frame; while in these frames, the cuttings are carefully sheltered by thin cloth nailed lightly over the glazed sashes, and also by mats which are placed over the sashes during the day. Great attention is given to the watering of the cuttings during the first month, as the slightest excess of moisture causes their decay. Water is given sparingly, and only by means of a garden syringe provided with a very finely pierced nose. In two or three days the drooping cuttings begin to look fresh and living, and by the end of three weeks, most of them have become provided with one or two delicate roots, and in three weeks more at the furthest, the process of hardening the young plants commences. This is effected by removing the boxes, with the cuttings still undisturbed, to other glazed frames (principally old cutting frames, where sashes from use and exposure do not fit tightly), into which air is admitted more and more daily, while the use of mats, as a protection against the sun, is dispensed with. After a fortnight of this treatment, the cuttings, now two months since they were taken from their parent plants, are placed, still undisturbed, in the boxes on terraced beds protected from the sun and rain by a low roofing of mats

dry weather they receive a little water: but this is only given when it is absolutely required, to save the plants from injury.

The different stages described in the above extract are render-

in which it is needful to keep the stock plants. Cuttings taken from such plants, excited as they constantly are by the strongest

moisture, take root rapidly, but are, when self-existing and unprotected, quite unable to withstand the vicissitudes of the

hardy condition. When this state is attained, the growth in the open air follows the course of the vegetation which prevails in Sikkim. The plants continue at rest during the cold weather, and on the return of spring, which varies according to the height above the sea, the cinchonas again begin to grow. In

rains, and aided by a considerable rise in temperature, the

month.

But, as has already been stated, the time is not far distant when this mode of propagation of the cinchonas will have to be

only limited by the amount of suitable land procurable for

for example, as first pointed out by Dr. Anderson, and their

ponding perfection, both as to quantity and quality. If so, then it will also be acknowledged that no Quinologist is needed merely

cinchonas, a point which has already been settled beyond all dispute. For, as Dr. Anderson has always maintained, wherever the cinchonas thrive, as they are doing in his plantations, the production of alkaloids must be proportionately abundant. That such is the fact, was clearly proved by Howard's analysis

jeeling and Ootacamund.

to separate the Quina, Quinidina, Cinchonidina, and Cin-

Government and other plantations in British Sikkim. It is economical, and, therefore, important that the alkaloids should be extracted from the bark in its fresh state. Mr Broughton, the Quinologist at Ootacamund, declares "that the barks part with their alkaloids more readily when fresh. The usual labour of drying, and subsequently powdering the bark, preparatory to manufacture, is thus rendered unnecessary, while the time of labour required to obtain the alkaloids in a state of solution is reduced."

All the materials employed for the separation of the cinchona alkaloids are procurable near Darjeeling, or from stations not far distant. *Lime*, in the form of the purest carbonate, abounds in the course of springs. It is originally contained in solution in the water, holding an excess of carbonic acid. When the water issues from the ground into the open air, the excess of carbonic acid escapes, and the carbonate of lime is precipitated in the beds along which these spring waters flow. The lime used for the building of houses at Darjeeling has been derived from this source. No limestone formation has yet been found to crop out anywhere in the Darjeeling hills, though it is probable such may exist deeply buried among the primary rocks of this portion of the sub-Himalayas, and it is possibly from this source that the springs become surcharged with carbonate of lime. *Soda* abounds in every bazar;

magnesia exists in seams of gneiss, which form the major part of the rocks in the district. *Animal charcoal* also abounds. So does *alcohol* made from rice and murwah. And *sulphuric* and *hydrochloric acids* may be had from Waddie & Co., of Cal-

cinchona alkaloids may be had either on the spot, or within tangible distance. There is, therefore, every encouragement

alkaloids from the cinchona barks cultivated at and near Dar-

be procured, through Dr. Parkes, from among the young medi-

from the vegetable kingdom, might form an important part of his duty.

ON THE USE OF STRYCHNIA IN SOME DISEASES

By

supersecretion of bile. In Reynolds' System of Medicine, Dr. E. Goodeve's exhaustive article, and a proper division of diarrhœa, will be found. I have nothing to say about the biliary forms; but a little consideration of abiliary diarrhœa, or that attended with a deficient secretion of bile, may do us no harm. Dr. Goodeve (in addition to the other varieties) well describes one form of diarrhœa, viz., the *chronic or cachectic, or white flux*. He does not think deficient secretion of bile is the exciting cause of the disease, but "that the liver derangement is merely a part of the great general disease which gave rise to blood changes." In the true *cachectic diarrhœa or white flux*, or in most of its forms, this is undoubtedly the case; and particularly so if amyloid degeneration of the villi and glands of the intestine is associated with it. Now and then, however, I think, we meet with cases of diarrhœa which are evidently caused by irregular action of the liver, and deficient secretion of bile. If, in a physiological point of view, we consider the changes that *then* take place in the alimentary canal, we need not wonder at diarrhœa supervening. In the present state of our knowledge of the action and uses of bile, these changes may briefly be summed up as follows:—(*a*). Fermentation proceeds unchecked, owing to the absence of bile in, or its non-admixture with, fermenting substances.

(*b*). The acidity of the gastric juice not being neutralized, acts as an irritant on the mucous membrane.

(*c*). Destructive changes in the composition of the chyme are not checked, and the very fœtid odour of the discharges is increased.

(*d*). The capability of absorbing oleaginous matters is diminished.

(*e*). There is a decrease in the excitability of the muscular fibre of the villi, and a consequent retardation of the flow of chyle through the lacteals.

In the form of abiliary diarrhœa under consideration, there are white chylous stools; or these may be slightly feculent or pultaceous, or of a *chalk and water* like variety. The looseness of the bowels generally occurs in the morning and early part of the day. This state of health may go on for some time, and then anœmia and prostration of strength set in; and when they do, we have the cachectic diarrhœa or *white flux* as described by Dr. Goodeve; in fact, there is no difference in the symptoms of the diseases, and they may be the same affection; but one form arises from deficient secretion of bile *per se*, while the other forms of *white flux* are dependent on other causes, and are merely associated with biliary derangement in common with other morbid states of the system. The disease is very common in Ireland, and is sometimes attendant on epidemics of continued fever. The symptoms are aggravated by preparations of opium and astringents, but strychnia cures it quickly; and this drug was successfully employed by Drs. Duncan and Graves, of Dublin, and others. It is also recommended by Dr. Goodeve. For the last six years I have always used it in this form of diarrhœa. Under its use the stools change and contain bile; they become feculent; diminish in frequency, and the general health soon improves. The remedy in reduced doses, with preparations of iron, and a nourishing non-irritating diet, now complete the cure. The preparation I now always use is the liquor strychnia of the pharmacopœia, sometimes in combination with the tincture of sesquichloride of iron, and sometimes with nitro-muriatic acid. That the diarrhœa depends on sluggish action of the liver, and deficient secretion of bile, is, I think, proved by the action of the remedy. Strychnia increases the biliary secretion, exalts the sensibility, and imparts tone to the nerves and muscles. Dr. Ingram Spence says strychnia acts through the blood; and that its effects are not due to the deterioration of that fluid by rendering it incapable of absorbing oxygen.

Icterus.—There are two chief varieties of jaundice, *viz.*, that which arises from suppression, and that from obstruction. According to Dr. Harley, "some of the constituents of the bile are generated in the liver itself," while "others exist preformed in the blood * * * * * * In jaundice from obstruction, all the elements of the bile will be re-absorbed into the circulation; while in that from suppression, there will only be an accumulation in the blood of the coloring matter of bile and cholesterine, no bile acids being present, since none have been formed." (*Tanner's Practice of Medicine*). In all cases of jaundice it is most important to determine whether there is suppression of bile or obstruction. We do this in order that we may employ the most appropriate remedies. In *Tanner's Practice of Medicine*, the following directions are given for this purpose. "Add gently to about two fluid drachms of urine half a drachm of strong sulphuric acid, and a fragment of loaf-sugar, the size of a pea. If at the line of contact of the two liquids a purple or scarlet colour is produced, it proves that the acids of the bile are present, and the jaundice is due to obstruction; but if merely a browning of the sugar be produced, the case is probably one of suppression." It is about jaundice from suppression I wish to speak, as its treatment is of course altogether different from that from obstruction. In the former there is no remedy like strychnia. In a bad case of jaundice in the Jail Hospital in 1867, I tried many of those remedies that are so highly recommended for promoting the secretion of bile, but without success; the disease not only showed no sign of abatement, but even got worse; and in despair I nearly gave up my patient, that is, all hopes of saving him. At this stage of the case a "happy thought" occurred to me—if strychnia cures *abiliary* diarrhœa by promoting the secretion of bile, why should it not cure jaundice when it arises from suppression, or non-secretion? The drug was at once prescribed, and the man was well in a few days. Since then I never use any other remedy in jaundice from suppression.

Intermittent and Remittent Fevers.—Dr. Hall, in the pages of the *Indian Medical Gazette* recommended strychnia in these diseases. In Mymensing, in 1866, I treated for some months many private patients, and nearly all of my fever cases in the Jail and Police Hospitals with liquor strychnia. The conclusions I arrived at are as follows:—

(*a*). In ordinary quotidian, tertian, or quartan ague, it is a valuable remedy, inferior to quinine, but superior to arsenic and native drugs.

(*b*). In remittent fevers it is too slow in its action, and consequently dangerous.

(*c*). In chronic intermittent fevers it is inferior to arsenic; that is, the latter drug is more likely than strychnia to cure an intermittent fever as quartan, extending over many weeks or months. This I experienced in my own person, although neither cured my fever.

(*d*). In convalescence after fevers, strychnia, in combination with the tincture of sesquichloride of iron, is a valuable tonic.

(*e*). I never found it, in from $\frac{1}{8}$ to $\frac{1}{10}$ of a grain doses thrice daily, to produce poisonous symptoms. One case (in Buxar) of a peculiar idiosyncrasy has, however, been recorded.

The action of strychnia on many nervous diseases is well known.

Dr. George Balfour recommends the administration of strychnia in cholera. (*Lancet*, Vol. I, 1867, page 8).

Dr. Charles Hunter recommends strychnia to be administered hypodermically in paralytic affections (*Med. Chir. Rev.*, Vol. XLI, page 445), and perhaps, if administered in this way in other diseases also, its action might be more apparent.

Dr. Chevers' case of poisoning by strychnia (in the Calcutta Medical College Hospital) goes to show that tobacco can be used with effect as an antidote. He administered the remedy [illegible].

RAJSHAHYE, *June*, 1868.

[illegible] "Warning to Therapeutists" [illegible] and Reader both the actions and toxical [illegible] doses.—ED., *I. M. G.*

CHOICE OF THE HUMAN ACTION IN INDIA.

By [illegible] M.D.

[illegible]

[illegible]

[illegible]

1,000 of the particulars above alluded to, must also be taken into consideration.

7. The original of Statement A was necessarily prepared [illegible], and is [illegible] in this office. I have, however, thought it expedient to forward you with all the details which it involves, and therefore submit the return *kotheewarce*.

8. You will perceive, from item 16 of Statement B, the [illegible] recorded between the years 85 and 100. I made special [illegible] parties in these cases; and, so far as I could [illegible] represented correctly.

I have, &c.

ALLYGUNGE SUB-DEPUTY OPIUM AGENCY, *The 1st February*, 1861.

(True Copy)

W. [illegible],

Sub-Deputy Opium Agent.

Statement showing the number of Deaths amongst the several Castes of Opium Cultivators in the Sub-Deputy Opium Agency of Allygunge during the Opium Year 1859-60.

1	NAME OF CASTE.															17	18	19	20
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
NAME OF *KOTHEE*	Koiree.	Mussulmán.	Aheer.	Koiripoor.	Rajpoot.	Bahmun.	Chamar.	Dussad.	Jooláha.	Tehoe.	Goorie.	Bhoobar.	Noomiah.	Lohar.	Various Castes.	Total number of adults deceased during 1859-60 in each Kothee.	Total number of cases, as per statement of persons enrolled.	Percentage of mortality in each Kothee, as per column 17.	REMARKS.
Gopeenáth	82	20	20	11	12	41	13	8	5	5	12	3	6	4	48	317	20,887	1·71	
Sookh	108	33	33	55	6	11	14	13	18	12	12	5	10	12	41	396	14,032	2·82	
Jeenjeera	27	23	13	10	21	19	7	8	9	9	2	9	3	2	25	200	13,276	1·51	
Total number of deaths	217	106	65	76	39	71	32	29	32	26	26	17	19	18	130	983	48,195		
Total number of persons enrolled	10,247	5,363	3,119	3,485	3,400	3,200	2,245	1,619	1,534	1,112	1,074	1,088	904	919	6,622				
Proportion of mortality per cent.	2·7	1·98	1·67	2·18	1·15	2·22	1·42	1·79	2·9	2·34	2·42	1·56	1·92	1·96	1·88	...	...	2·4	

Statement showing the various Causes of Death, Number of Casualties, and Ages of Deceased, amongst the Opium Cultivators of the Allygunge Sub-Deputy Opium Agency, during the Opium Year 1859-60.

1	AGES OF DECEASED.															17	18
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
NATURE OF DISEASE.	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 100	Grand Total.	REMARKS.
Fever and Ague	29	23	85	41	158	26	108	9	105	24	41	5	2	...	1	662	
Cough	14	12	46	10	44	4	24	6	27	5	4	...	...	...	...	196	
Fever	1	2	7	2	15	3	6	...	11	1	3	2	...	...	...	53	
Dysentery and Diarrhœa	2	1	2	1	4	...	2	3	5	...	...	...	...	...	1	21	
Asthma	1	1	...	1	...	1	1	2	2	...	2	...	...	...	...	11	
Inflammation of Chest	...	1	2	1	3	...	...	1	...	...	2	...	...	...	...	10	
Worms	...	...	...	...	2	...	3	...	...	1	...	...	...	...	...	6	
Cholera	1	...	...	1	1	...	1	...	...	...	...	...	...	...	...	4	
Small-pox	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	3	
Leprosy	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	2	
Jaundice	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	3	
Scrofula	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	
Asthenia	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	
Paralysis	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	
Total	48	42	145	60	228	37	152	24	148	37	60	7	2	...	2	983	

ALLYGUNGE SUB-DEPUTY OPIUM AGENCY, *The 1st February*, 1861.

(True Copy)

W. MASTERS,

Sub-Deputy Opium Agent.

J. G. [illegible],

Officiating Sub-Deputy Opium Agent.

The above return, [illegible], however, it is [illegible]. Dr. [illegible] the [illegible] of [illegible] and [illegible] was [illegible]. As the *Indian Medical Gazette* is read by [illegible] and as [illegible] with Hindoo [illegible] to any [illegible] of [illegible] observations of the same [illegible] would be [illegible]. Ed. *I. M. G.*

A RETURN OF MEDICAL OFFICERS ADMITTED INTO THE THREE PRESIDENCIES OF INDIA FROM 1834 TO 1868, WITH A STATEMENT OF THEIR FINAL DESTINATIONS.

Compiled from Dodwell & Miles' *List* by C. R. Francis, M.B.

	BENGAL. Number admitted, 1,110. Died											MADRAS. Number admitted, 1,110. Died											BOMBAY. Number admitted, 425. Died										
	After 1 year's service.	Do. 2 years' service.	Do. 3 years' service.	Do. 4 years' service.	Do. 5 years' service.	Between 5 and 11 years' service.	Between 11 and 20 years' service.	Between 20 and 25 years' service.	Between 25 and 30 years' service.	Total.

SUMMARY OF FIFTY POST-MORTEM EXAMINATIONS OF INHABITANTS OF THE JESSORE DISTRICT PERFORMED IN THE JAIL HOSPITAL.

By KENNETH McLEOD, A.M., M.D., F.R.C.S.E.,
Civil Assistant Surgeon of Jessore.

I.—WEIGHT OF THE MOST IMPORTANT ORGANS, AND THEIR RELATION TO BODY WEIGHT.

THE examinations which form the subject of the following notes were all, with two or three exceptions, performed by myself, and the facts in each case were noted at the time of performance. The summary will possess a peculiar ethnological and pathological value, from the circumstance that all the subjects examined were natives of this district. So many cases of individuals, whose life and ancestry are confined within so small an area, can only be obtained amongst a people of stationary propensities, and not possessing facilities or inclination to migrate. In them we possess indications not only of the pathological effects of the circumstances of life peculiar to the area in question, as regards individuals, but also as regards race; for the conditions which produce changes in the individual, so violent as to come under the domain of pathology, must also produce changes of a physiological kind in the succession of generations, which will constitute peculiarities of conformation of the race. The time when such records can be easily collected is rapidly passing away. Education and enlightenment, combined with increased facilities for migrating, will eventually break down the barriers which now separate races, and geographical distribution and classification of the animal; man will become more and more a thing of the past. Now is the time to gather statistics of this kind with ease and accuracy. Large questions, such as this, require large inductions, and many simultaneously labouring; and were data collected on a plan somewhat similar to that of the following article in every district in India,—and there is no difficulty whatever in doing so,—the information gained would be of the utmost value. As now we are able to map out the country, as regards its physical and meteorological features, so we might be able to map out its inhabitants, as regards their physical conformation, physiological peculiarities, and pathological tendencies. I coincide with Dr. Francis in his remark on this subject, in an article on "Fatty Degeneration," (*Indian Medical Gazette*, Vol. III., p. 150,) most thoroughly; only I would have the investigation conducted on the broadest basis, and on some uniform system. With these remarks I shall place my observations on record without further comment. The serial number attached to each case in Table No. I. will be preserved strictly as indicating the cases throughout the discussion.

1. *Scale and weights employed.*—The same scale and weights were used for all the cases. The scale is English, and the weights, which I have carefully tested, are the "bazaar weights" of 80 tolahs to the seer, and 40 seers to the maund. The bodies were weighed without clothes on an accurate balance, showing bazaar weights supplied for the purpose of weighing prisoners. The weights are thus thoroughly uniform, and capable of easy reduction to English weights.

2. *Body weight.*—The average weight of the 50 bodies, all males, is 40 s. 4·7 ch. (82·73 lbs. avoir.) This is considerably below the weight of the bodies of living males of this district. The average weight of 4,439 persons belonging to the Jessore district, mostly males and adults, admitted into the Jessore Jail during the years 1862 to 67, I find to be 1 md. 11 s. 9·6 ch. (105·94 lbs. avoir.) I also found the body weight of 30 males, aged from 18 to 55 years, whom I selected as healthy adults, to be 1 md. 12 s. 10·2 ch. (118·08 lbs. avoir.) The average height of these persons was 5 feet 3·5 inches. From these data, 1 md. 12 s. (106·77 lbs. avoir., or 7·6 stones) may be taken as a fair average of the weight of adult males of this district. This gives a deficit of 11 s. 11·3 ch. (24 lbs. nearly) to be debited to the effect of sickness and the wasting of tissue, which, in the large majority of cases, precedes the fatal issue. As this wasting must detract from the net body weight a much larger proportion than from the weight of the several organs, the relation of the several organs to body weight must be considerably under-stated, by taking the average body weight from the dead. Another difficulty in adjudging the true proportion of the weight of organs to body weight,—and I take this to be the correct index of the real weight for purposes of comparison,—consists in the circumstance that many of the organs which go to constitute the average in each case are in morbid condition. The problem to be solved, therefore, is a more complex one than at first appears. It is, *first*, to ascertain the correct average weight of the organs in a state of health in the adult; and, *secondly*, to compare these with a true body weight got from a large number of cases. The first of these objects can only be attained after the influence of age, disease, and morbid condition is eliminated. This will form the subject of analysis in a future communication. The second point has been already determined.

3. *Brain weight.*—The average weight of the whole brain mass is 1 s. 5·9 ch. (44·95 oz.) The range is from 1 s. 11 ch. (55·42 oz.) to 1 s. ½ ch. (33·87 oz.): mean 1 s. 5·7 ch., which comes very near the average. The number 1 s. 5 ch. occurs oftener than any other. The relation of the average weight of the brain mass to the average body weight is 1 to 30, and to the corrected body weight (1 s. 12 ch.) 1 to 38. This relation fluctuates between 1 to 42 and 1 to 16.

The *cerebrum* gives an average weight of 1 s. 3·07 ch. (39·0 oz.): 1 s. 2 ch. (36·9 oz.) is the most frequently occurring number. The range is from 1 s. 8 ch. (50·26 oz.) down to 14½ ch. (29·76 oz.): mean 1 seer 3·2 ch. (39·41 oz.). The proportion to average body weight is 1 to 33·8, and to corrected body weight 1 to 43·7. The proportion to body weight ranges from 1 to 59 to 1 to 19.

The *hemispheres* average each 9½ ch. (19·42 oz.). They are equal in weight, except in two instances, in which the left hemisphere has the advantage.

The *cerebellum* averages 2·3 ch. (4·71 oz.) Its weight ranges from 3 ch. (6·15 oz.) down to 1½ ch. (3·07 oz.): mean 2·25 ch. The average proportion to the weight of the cerebrum is 1 to 8·2, and to that of the whole body 1 to 280. Taking the corrected number for body weight, the proportion is 1 to 361.

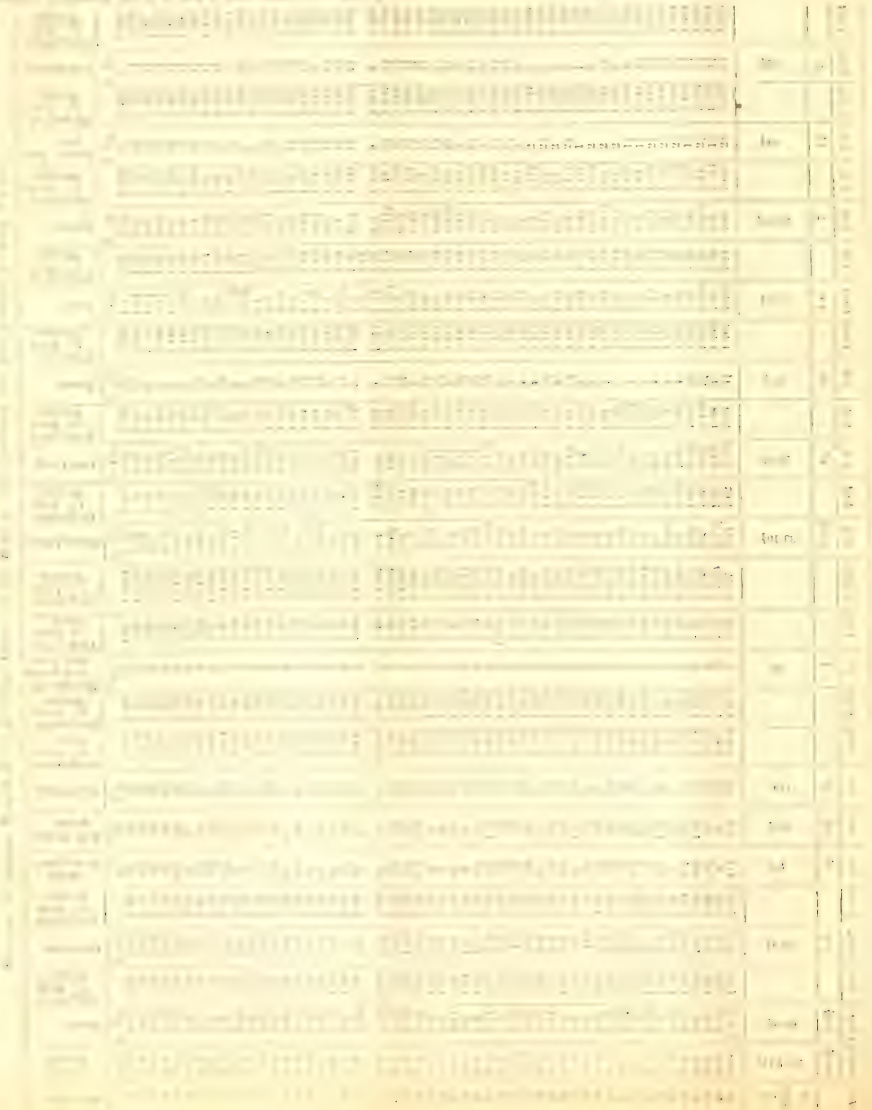
The *medulla oblongata* and *pons varolii* together give an average weight of ½ ch. (1·02 oz.); a proportion of 1·38 to the cerebrum, and 1 to 1289 to the average body weight, or 1 to 1664 to corrected body weight.

I have no record of the weight of the spinal cord. These facts may be taken to express the normal weight of the brain and its divisions; for, as we shall hereafter find, these organs were sound in nearly every case.

4. *The lungs.*—The right lung gives a greater average weight than the left, of 2·4 ch. (4·92 oz.). The average weight of the organ is 10·7 ch. (21·95. oz.). The range is from 2 s. 2 ch. (69·8 oz.) to 4 ch. (8·21 oz.): mean 1 s. 3 ch. (23oz.); 6, 7, 8, and 9 ch. are the most occurring numbers. The proportion to body weight is 1 to 64 or 1 to 77 of corrected body weight. The range is from 1 to 197 to 1 to 20. This betokens a great fluctuation in condition.

The left lung averages 8·3 ch. (17·02 oz.). The weight ranges from 1 s. 6½ ch. (46·18 oz.) to 4 ch. (8·21 oz.): mean 13½ ch. (27·09 oz.) The most frequently recurring figures are 5, 6, and 7, and fractions of them. The proportion to body weight is 1 to 77, or 1 to 100 of healthy body weight. The proportion varies from 1 to 150 to 1 to 22.

5. The *heart* gives an average of 3·8 ch. (7·79 oz.), and varies from 7 ch. (15·79 oz.) to 2 ch. (4·10 oz.). mean 4·87 ch



CASES FROM PRACTICE.

A CASE OF HERMAPHRODITISM.

By JOHN MURRAY, M.D.,

Civil Surgeon, Madeira.

THE following curious case of hermaphroditism, so-called, which occurred lately in the District Jail at this station, may possibly be thought worthy of some notice. The interested would peculiarities I am about to describe was sentenced to [illegible] imprisonment for six months, and was incarcerated as a [illegible] in the Magistrate's warrant. To avoid confusion, therefore, while I relate the history of the case, I shall take it for granted that the assumption of the Magistrate is correct.

My attention was first directed to the case last January by the Jailer, who informed me that he had some misgivings as to the sex of a convict who was at present confined among the female prisoners.

Acting on this statement, this person had attempted to take improper liberties with one of the females on the previous night. On this circumstance being reported to him, he had examined the accused woman, and observed, much to his surprise, that she had a penis, which he described to me as being of "a *pretty good length*," and altogether he seemed to think that he had a very delicate case to deal with.

On questioning the woman, I was greatly struck with her masculine appearance. She seemed about 30 years of age, and was about 5 feet 4 inches in height. She had broad shoulders, and the muscles of both chest and limbs were strongly developed. In manner she was shy and reserved, and had a quick and harsh voice.

On examining the organs of generation, a very much enlarged clitoris was observed protruding from the upper part of the labial [illegible]. It was nearly as much in length and exactly resembled a small penis. There was no orifice in the glans. At the root of the clitoris there was a cutaneous pouch, which contained *one* testicle about the size of an olive.

On fully separating the labia, the meatus urinarius was observed occupying pretty much its usual situation, but there was no other opening or canal of any kind, and not a trace of a vagina. I ought also to mention that there was no hair on any part of the face.

The woman positively asserted that she menstruated every two months, and that the secretion escaped by the urethral [illegible]. This statement, however, is unsupported by evidence of any kind. She stated that she had never in her life experienced sexual desire, and utterly denied ever having taken liberties with any of the female prisoners. She consented herself to be a female, and had never doubted the fact for a moment. She appeared to possess considerable intelligence, and was rather ashamed of her physical peculiarities. From what I have mentioned, her claims to be considered a female may be thought somewhat questionable; but on this point I refrain from offering an opinion, merely remarking that she cannot be said, strictly speaking, to belong to either sex, as the malformations I have described must almost certainly have occurred through an arrest of development at that early period of fœtal existence when the organs of generation in both sexes are the same.

2nd June, 1868.

CASE OF HEMIPLEGIA OCCURRING AFTER COLD AND DAMP. SUCCESSFULLY TREATED BY STRYCHNIA AND GALVANISM.

By R. D. [illegible],

Civil Surgeon, Portsmouth.

THE following case came under my observation during the [illegible] of 1867:—

Miss O., a healthy, robust looking girl, of florid complexion, [illegible] dark brown hair, aged 14, [illegible] [illegible] face was that of a female [illegible] [illegible] on the 5th [illegible], after exposure to a heavy rain storm, while out for an airing the evening before.

I first saw my patient on the morning of the [illegible] following day of the [illegible] case [illegible] informed me that she [illegible] [illegible] [illegible] [illegible] on the evening previous to the [illegible] [illegible] [illegible] [illegible]

The Indian Medical Gazette.

NOTICE.

All subscriptions will in future be acknowledged in the INDIAN MEDICAL GAZETTE, *instead of by letter as heretofore.*

Subscribers who have not remitted payment for 1868 *are requested to do so.*

HARE STREET, Calcutta. } WYMAN BROS., *Proprietors.*

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HARE STREET, Calcutta. } WYMAN BROS., *Proprietors.*

It is particularly requested that all Communications to the "Indian Medical Gazette" may be written on one side of the paper only.

Personal applications cannot be answered, and no public notice can be made of pending cases.

Subjects of that kind must be communicated by letter.

Communications intended for insertion must reach us early in the month if possible, else they must unavoidably stand over to the following month.

Letters, parcels, &c., to be addressed to the Publishers, Messrs. Wyman Bros.; and not to the Editor, or Editorial Office.

THE CONSIDERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

HARE STREET, } WYMAN BROS., *Proprietors.*

"We have received the public list of [illegible]. Among [illegible] we find [illegible] and we [illegible] [illegible] [illegible]

ser, at one time, students at the College, but that they were either unable to pass the examination at the end of their studies, or that they left the institution after having completed only one or two terms there. Now, this is a crying evil; and it is said that the law cannot touch these deceivers. We venture to doubt this. That singularly comprehensive and elastic book of law, the Penal Code, has an Act No. XLV. of 1860, Section 415, headed "Cheating," in which a man, who pretends to be what he is not, renders himself liable to punishment.

The best remedy undoubtedly would be, as suggested at a meeting of the Bengal Branch of the British Medical Association, to extend to Calcutta the English "Medical Act," which, by the way, has not done all the good it might, even in London, have done, *although* the *séances* of the Council have cost the public 12s. 6d. a minute! But, pending this, we would strongly advise that the capabilities of the Penal Code be tested. We doubt not that it will be found sufficiently effective for the purpose. Some one possessed of sufficient public spirit, energy, and leisure must come forward and prosecute.

SUBORDINATE MEDICAL DEPARTMENT.

We have received several enquiries on the subject of the new rules for the Subordinate Medical Department, with reference, more especially, to the *training* of youths. We would say, in reply, that there are many *moot* points which, being difficult of solution, have, we understand, been referred to the Government. In the course of a few weeks, we may be able to reply satisfactorily to our correspondents. With regard to the Widows' and Orphans' Fund, we may state that we are in correspondence with a senior member of the Department, to whom we have communicated whatever information we were in possession of, and to whom we have likewise suggested a course of action, which seems likely to lead to a satisfactory result. But our friends must not be too impatient. *Fund Movements* and *Boards*, and such like ponderous machines, are naturally endowed with *tortoise* habits. It is not in their constitution to move at railway speed, as some of our correspondents seem to expect them to do.

THE PROPOSED MEDICAL SCHOOL AT RANGOON.

The supply of native doctors for service in British Burmah from the resources of the Bengal Medical Department has long been a matter of considerable difficulty, and this notwithstanding the fact, that the pay, when a native doctor is ordered to Burmah, is increased to the extent of 50 per cent. They almost invariably object to serve in that country, and when they are packed off to comply with orders, they—if they have served much more than seven years—with few exceptions claim the privilege of discharge from the service, rather than undertake employment which is equally distasteful and unprofitable. The climate, it is alleged, is inimical to the natives of Bengal. The expenses of living are barely covered by the increased pay. There are almost insuperable obstacles to the transport of native doctors' families. Illness causes [illegible] expenses [illegible] and after a brief residence [illegible] by unwillingness and discontent, they are sent back invalided to Bengal [illegible] in health.

Under such circumstances as these, Dr. W. A. Green, the Inspector General, Medical Department, Lower Provinces, suggested the advisability of having the Subordinate Medical Department in Burmah recruited from the Madras Medical College, under the impression that the natives of that Presidency were less obnoxious to the climate of British Burmah than the Hindoostanees. He, however, pointed out the probable inability of the Medical authorities of that Presidency to meet the requirements of the Subordinate Medical Service in Burmah. And such really appears to be the case. For the Inspector General of the Indian Medical Department, Madras, observes that the Principal of the Medical College is unable to receive more than 33 pupils each session, and that passed men out of this number are already found [illegible] to meet the ordinary requirements of the Army and Civil Departments of the Madras Presidency. Moreover, subordinates go to Burmah, when ordered, *unwillingly*, in consequence of the much greater cost of living there, to meet which they have no increase of pay granted to them like the native doctors furnished from Bengal: and it would seem that the climate of Burmah is not less inimical to the natives of the Madras Presidency, than to those of Bengal.

Dr. Green points out two methods by which the difficulty in question may be surmounted. The *first* is, that Government should authorize a sufficient increase of subordinate servants on the Madras medical establishment, to enable it to meet the demands of the Chief Commissioner; or, 2*ndly*, that a school should be established, if practicable, for the education of native doctors at Rangoon, upon the model of those at Agra and Nagpore. It would now appear that the Madras Government are disposed to adopt the first alternative. The [illegible] Principal of the Medical College has been requested to explain the reason why only 33 pupils could be received into the Junior Department in 1868, and to indicate the arrangements which might be necessary in order to increase by about twenty the number of pupils either from the Presidency, or from Burmah, if natives of that country, capable of receiving instruction in the English language, are willing to come to the Medical College at Madras. We apprehend the reason is plain enough—want of accommodation for shelter, and the maintenance of discipline in obedience to the Articles of War. If, therefore, it be the case that considerable expense will have to be incurred before the additional twenty students can be accommodated, it becomes a question whether, in view of all the circumstances of the case, it is desirable, expedient, or prudent, to incur any outlay in this direction for the accomplishment of the object in view.

Should the supply of subordinate medical servants for Burmah be chiefly met direct from Madras, in the manner seemingly contemplated by the local Government, the ill effects of the climate upon the natives of Madras, and the great expense of living, still remain as barriers to the success of the scheme. An increase of 50 per cent. has not succeeded in reconciling the rice-eating Bengal native doctors to take willing service in the country. Is it probable that a similar increase to the pay of the hospital assistants of Madras will prove more successful? That an adequate number of educated Burmese will be tempted to go to Madras, for tuition up to the qualification of a medical subordinate, may be regarded as problematical. But the scheme of the Madras Government, one which

also lends the weight of his opinion and authority to the suggestion, and he urges that the Chief Commissioner of British Burmah should be requested to take the necessary steps for the ... a Director of Public Instruction and a staff of Inspectors superintending and controlling an elaborate system of general education among her inhabitants, and must by this time be ... at first according to the plan adopted for the instruction of medical ... the province, now prominently brought to light by the heads of the Medical Department in Bengal and Madras, clearly indicate that an opportunity has presented itself to the Chief Commissioner for the bestowal of an everlasting blessing upon the important province under his management, by laying the ... of a Medical School at Rangoon. What Lord William Bentinck did for Bengal in 1835, Thomason for the North-West Provinces in 1854, Sir John Lawrence for the Punjab in 1863, and Sir Richard Temple for the Central Provinces in 1867, Colonel Fytche possesses the power, if he chooses to exercise it, of accomplishing for British Burmah in 1869.

That the Burmese are apt at receiving general and medical ... we know to the full. Dr. Low, a graduate in medicine at one of the American Universities, is a Burmese. We saw him on his return to India, and we were highly satisfied with his general and special or medical attainments. But the education he obtained was secured after travelling half-way ... What we want is ... for the development and growth of a sound medical education on the spot at Rangoon. Let medical instruction be conveyed to the Burmese in their own country. In short, we are anxious to see young Burmah taught medicine in a medical school of her own. When this much has been accomplished, the demand for medical aid from Bengal or Madras will cease. Not only will the Rangoon Medical School supply all the wants of the local public service, but the surplus will be utilized in the spread of the European system of medicine among the civil population of the country, and thus the greatest good to the greatest number will be effected,—a principle as true in medicine as it is in philosophy, politics, and political economy.*

It is now, we understand, finally settled that a Medical School is to be established in Burmah: but that its operations, in the days of its infancy, are to be limited to the instruction ... standard simply. The time will come when the higher class of "Sub-Assistant Surgeon" must be created: but the creation ... be premature at present.

... instruction?" Upon this subject we hold a very strong opinion. ... Quite enough English has been taught in Burmah, even up to the present time, to justify the authorities in insisting upon this qualification. The students need not be "admirable Crichtons;" all that is required is a sufficient acquaintance with the language to enable them to *understand the lectures*, and to *write and read prescriptions*. Of course, more than a mere smattering is necessary to enable them to do this: but with the requisite attainments we believe that the educated youth of Burmah are sufficiently familiar. It must not be supposed that we are too stringent in our demands. The era is progressive, and the time has arrived when the Government has a right to expect superior qualifications to those with which native doctors have hitherto been wont to pass for competent first class men. It is no uncommon thing for such to mistake *Calamine*, *Cerate*, for *Calomel!*

Prior to the admission of students into the Medical Institution at Rangoon, we would urge that they should have been required to pass two or three years in a civil or regimental hospital, under the observation of the European Medical Officer. This is the Madras system, and it is found to answer very well.

VACCINATION.

It has been suggested to us that the remarks which we made last month on the subject of "inoculation being made penal" may lead careless readers to suppose that we advocate this measure *at all hazards*. We regret that our meaning should have appeared at all obscure; but, to do away with any misconception on this subject, we would state at once that we only advocate a penalty being put upon the practice of inoculation for small-pox in those localities where the efficacy of the vaccine prophylactic may be *thoroughly depended upon*, and where the system of supervision is complete. Otherwise, we would not oppose a well-ordered system of inoculation,—one in which the name of each inoculator was registered, and his work superintended. But *we would push vaccination* ... such a virus, and to promote the absorption of inoculators, are objects at which we should systematically and zealously aim. We are aware that, in the former respect, Dr. Charles, the Superintendent General of Vaccination in Calcutta, has been eminently successful; and it is interesting and encouraging to ... of the 26 vaccinators employed during the past vaccinating season in the Darjeeling circle, 12 were *quondam inoculators*. In the Hazareebagh circle, where inoculators for small-pox have, for the past ten years, given up so inoculating, the practice has been adopted by the *Sindooriahs*, or vermilion sellers, three of whom are now vaccinators.

"*Mutantur non tollitur error.*"

TO THE NEILGHERRIES AND BACK.

(*Continued from page* 187, *Vol. III.*)

Between Calcutta and Madras there is not much "sea" journey to speak of. At the same time there is quite sufficient to bring plenty of *desagrémens* with it to those who are ... therefore, a good vessel and a favorable season (where these are left a matter of choice) should be among the

cost considerations. The trip being made frequently during the hot season, or about the time of the *Deonga Deepa* holidays,—in the autumn in fact,—it is of paramount importance that a vessel of some size should, if possible, be selected. In the height of the S.W. monsoon, (always an adverse wind,) with an adverse sea, although the passage may, even under these circumstances, not occupy more than five or six days, it will often happen that the passengers, and especially the lady portion, are driven below; when, if the saloon and cabins *be* small, an amount of misery must be endured, which those only who have gone through, and survived it, can appreciate. For the same reason, it is well to fix upon a steamer which has "cargo ports open" in rough weather. Four or five years ago, the English P. & O. Company fitted up three or four of their vessels with a few *upper-deck* cabins for passengers, situated at the stern. Now, these have all been done away with; and, we venture to think, a very serious mistake has been committed. Most undoubtedly, the existence of such accommodation for invalids was an incalculable boon. Conceive the poor victim of hepatic abscess, suffering at the same time from diarrhœa, one to whom *air* is everything, and who has been "got off" to sea as quickly as possible to secure it: conceive such an one compelled to leave the deck every half-hour or so, and descend below in obedience to urgent calls! Of what benefit will the sea air be to him? We have witnessed such a case, one of very many; and we have no hesitation in saying that the sufferer's end was hastened in consequence of the debility and irritation resulting from these repeated descents. Had an upper-deck cabin been available, or had the cabin which he occupied been constructed on the principle which the cabins of the P. and O. vessels ought to be, the patient would have been placed under the *most favorable* circumstances possible, instead of the *worst;* and he would certainly have been ensured, so far, a *peaceful* passage.

How many of those who are passengers on these vessels are more or less ill in various ways! We are confident that the confinement below frequently neutralizes the advantages of the sea trip to many such. It is urged that these upper-deck cabins interfere with the symmetry of the vessel. But who cares about symmetry in sickness? We cannot think that the Directors of the P. and O Company would for one moment allow such an objection to have any weight, if it were represented to them that the advantages of such cabins were really very decided. No one, on the other hand, we believe, denies the advantages; but it is, further, argued, that there is always so much jealousy and such heart-burnings on the part of those who have not been fortunate enough to secure them! This we understand to be the real reason why the cabins have been done away with. There is no nautical objection to them, we imagine? But, surely, the step was unnecessarily precipitate. Could no arrangement have been made by which the really very sick, and they alone, should occupy such cabins? The other passengers would never grudge them if they saw that no partiality was shewn. The selection, we should think, could very readily be made under the superintendence of the Medical Superintendent and the Surgeon of the ship. Has this ever been tried? Such cabins should be known as *Invalid Cabins*, and no attempt should be made to appropriate them for any other purpose.

We write strongly upon this point, having frequently made passages on the P. and O. steamers, and having as frequently witnessed the great discomfort to which invalids are subjected in the absence of upper-deck cabins, or of *habitable* cabins below. In this respect, sailing ships possess great advantages over steamers so constructed. It is not so on the Canal line of Steamers, or in the West Indies Mail Packets, which ply, the one between England and America, and the other between England and the West Indies. In the former vessels there are, we believe, several cabins on the kind which we advocate,—a kind of poop cabin; and if they succeed—as we understand they do—with one Company, surely they might with another? The cabins in the West India Mail Packets, where the decks are flush, are very large. It is singular that, in the portion of the passage between England and India, where there should be the greatest space and the freest ventilation provided for passengers, *viz.*, between the Indian port and Suez, there are actually the least. The P. and O. steamers on the Mediterranean of [illegible] Companies, French as well as English, are magnificent. Is there any good nautical reason why these steamers* should not take the place of the vessels in which we are now condemned to live some three-fourths of the passage on this side of Suez? Is it draught of water in the Red Sea the difficulty? And if so, is it in mediâ?

A temperance of two or three weeks on board a P. and O. steamer, on the Indian side of Suez, is not enviable, except for those who have risen high in the P. and O. service. These vessels do not exactly represent *Lyceum*. We have no doubt, whatever that, if the public were more intimately acquainted with the internal economy of these P. and O. vessels, it would not be so ready to jump into them, even though the exit should be from Calcutta. It will, of course, happen sometimes that a choice of two evils presents itself—risk of life in India, or a P. and O. steamer for a few weeks. The selection is evident, but should the public be driven to this extremity?

At the best, a voyage in one of these vessels is a *period of endurance*, and the only consolation a passenger can have is, that it will soon come to an end. If it be so for those in health, *à fortiori* for the invalid it must be a season, very frequently, of misery and torture. The confinement in a small ill-ventilated cabin, the uncertain food, and the repeated changes from one conveyance to another, between the Indian and the English port, are all very trying; and, so far from the invalid deriving benefit from the voyage, it would be a matter for surprise if a positive increase of the malady, for which he was sent to sea, was not the result. We are inclined to think that all these *desagrémens* are often lost sight of when a patient is hurried off to sea in a P. and O. steamer. Undoubtedly the sea air will sometimes act like a charm, and so soon render the invalid a "new man," that he will be able to [illegible] all the discomforts without being prostrated by them.

But, in the case of a delicate lady, or where there is but little stamina in the system, we fear that too much is expected from this all-powerful agent. In these cases, a well found, 1st class sailing-ship possesses far greater advantages. Of course, where *time* is a *paramount* object, the Overland route must be adopted [illegible]; but, where time

* Even in these steamers the cabins could be larger [illegible] [illegible] [illegible]

have to speak hereafter, the latter alone are available. We can

is accomplished in *half the time.*

to those who decide upon the Cape route for England,

neutralize the ill effects of indifferent food, and, occasionally, unsuitable society. We would rather urge the selection of a first class East Indiaman, where the Captain is a genial companion, combining the skill of the sailor with the grace of the gentleman. To those who sail with him we would say, recognize his temporary sovereignty, conform to the rules of the ship, and the chances are that all will feel more like

breaks up, than as inmates of a tavern, (to which these vessels have been most unjustly compared), where the welcome closes with the bill, and where intimacy and the *entente cordiale* are

(To be continued.)

Review.

Report on the Diseases of Cattle in Lower Bengal. By [illegible] M.D., A.M., M.D.

THE Supplement to the Bengal Government Gazette of 11th

scarcely be overrated. Whether, as in Europe, a food staple, or,

author presents us with an intelligible classification of the principal diseases of cattle in Bengal

author thinks, may be difference of intensity rather than of kind,

desirable, for practical reasons, that full distinction be made.

more important affection, is the disease known as *gooter*,

of English Veterinary Medicine.

Of the second sub-division, or *non-eruptive* epizootics, the

portance are noticed under the same head.

The geographical distribution of epizootics appears to be uniform throughout the province, though there are certain dis-

as a fertile source of it, it would be useful to draw comparison with the experience of the Tirhoot district, where the practice obtains of growing fodder for cattle; where therefore accidents

where, as is well-known, the quality and condition of stock are greatly superior.

sented with much detailed information derived from close and careful analysis of the work of the several observers who pre-

his arrangement of its matter to be clearly illustrative of a series of definite propositions, very similar to, if not identical with, the laws which human epidemics follow; for ready comparison, he cites the latter as they are laid down by Dr. Aitken.

which head, as Dr. McLeod tells us, the information is necessarily somewhat speculative. The usual distinction of predisposing and exciting causes is adopted. Of the former, season is said to be the most important; by which, we conclude, is meant particular periods of the year. The varieties of period, however, in the several localities are so numerous, that they appear to us to prohibit any general conclusion of seasonal prevalence. Moreover, the use of the term would, in our judgment, be better avoided, as too vague for the purposes of exact enquiry, until meteor-

than it at present conveys. The remark has application only to the direct relation of annual periods to epizootic disease. If Dr. McLeod's conclusion of the concurrent prevalence of epizootics and epidemics be clearly established, there will be indication of resultant, seasonal, and other relations, which require no meteorological data to give them importance.

dence is so suggestive, that we hope before long to learn that he has made it the subject of extended research. "There is

son has indicated with respect to cholera, namely, that the hot transition months next, and the wet months produce least." Again, "the extensive prevalence of an epidemic of fever seems to have, in 1864, preceded or coincided with an unusual prevalence

of rain, and a violent outbreak of fever and cholera in the district of Jessore, and cattle disease broke out violently to the south of the district, and extended to Backergunge about the same time." There is not at first sight, perhaps, much in this that is calculated to arrest the attention of the reader; certainly

obscurity which they afford have been in danger of losing

lexical in the observation that the men and the cattle of a district are simultaneously affected by some prevalent morbid influence; but seen by the light of recent investigation, the fact suggests relations of cause and effect which a very few years ago were undreamt of. The tendency of modern enquiry is to resolve into their real component elements all etiological agents. The microscope and the test-tube have done much to render us undreamt of wonders which are extended and indeterminate. In cholera and fevers, specific media of communication, and perhaps of origin, have been demonstrated, where before the same conclusion would have been accepted as a sufficient guide, and it is indispensable that in such an enquiry as that now before us all possibilities of cause should be examined to the full extent of means and opportunities. To learn that there exists a close relation between outbreaks of cattle disease and human epidemics in Bengal, is at once to be reminded of the phenomena observed in Germany in 1866, where the consumption of trichinous meat "was found to be at the root of local epidemics, which of old would doubtless have been confounded with fever." So says the Medical Officer to the Privy Council in his Seventh Report; and though there are, in the habits of the people of Bengal, such differences as render them comparatively little liable to direct parasitic infection by consumption of beef, those who would find their way to many [illegible] would find their way to ruin.

And if the pursuit of this subject should result in the discovery, [illegible] that the spread of disease takes place through parasites, or through still lower forms of organic life, there will [illegible] in the prevention of these diseases. That a sick beast is [illegible] with vermin is, of course, no proof that the vermin have caused the sickness, but it calls for close enquiry into the exact relation between the phenomena, and there are scattered through Dr. McLeod's report facts which render [illegible] from the mere parts which it attacks is suggestive of direct communication from the ground the animal treads on, and the vegetation it crops; and in the severer maladies, the symptoms, [illegible] corresponding with those of trichinous [illegible] with the known results of algoid or fungoid [illegible], lead us to regard any investigation of cattle [illegible] as complete, or even as fairly advanced, which does not [illegible] the question of parasitic origin.

Further, an enquirer of Dr. McLeod's capabilities, once [illegible] by such a subject, would, if he met with positive results, soon be carried lower down in the scale of creation [illegible] the bulk of the errors which he [illegible] to get [illegible] to the [illegible] body.

πρὸ τῆς ἴχνης· ἀλλ' ἀεὶ φαιδίτατ' ἀχνῆ, μετὰ τὸ τὴν τελευτὴν ἐτῶν μυριάκοντα τελευτᾶν.

[illegible] as the means of further penetration existed. Having followed an organic cause of disease from animal to vegetable life, he would next enquire to what abnormal condition of the vegetable creation itself the cause might owe its appearance; and another vast field of enquiry would lie open to him in the whole subject of [illegible], he would proceed to some primal change of organic matter, beyond which his means of research would fail to carry him. But by this time he would have developed facts and laws serving or tending to combine into one intelligible and consistent course of natural operations the [illegible] number and variety of form. With this portion of the report, for the present cease. The subsequent sections contain a detailed record of the technical characters and treatment of the several diseases as far as observation and experience have hitherto gone. [illegible] but being as yet uncontroverted, offer no material for criticism. [illegible], however, some very interesting and important comparisons are drawn between diseases of cattle [illegible] we would [illegible] with the remarks on [illegible] C[illegible].

The remaining part of the matter in the report is [illegible] such as to make it [illegible] and [illegible]. However, a good grasp of [illegible] language and reasoning, we find a certain laxity of expression, which is to be regretted. [illegible] page 22 [illegible] with the [illegible] the rapidity of the [illegible], we infer that they are very [illegible] and dubious [illegible], and most probably *capable of being exercised by atmospheric influences*." The words italicized are of uncertain meaning. They may indicate that material agents are carried mechanically by the aerial motion, or point to some change in the atmosphere itself, its gaseous constitution, or its polar state. Also, though for somewhat different reasons, we feel positively rebellious against such terms as a "painstaking enquiry." Page 69,

Short Notices of Recent Books.

Education: Intellectual, Moral, and Physical, considered as a subject for State Legislation, etc. By A Physician. London: Churchill. 1868.

This is not a medical work, nor does it refer, more than incidentally, to medical training; but it is an essay on the subject of State education, and is written by one who, while he thoroughly understands the problem before him, offers as an excuse for undertaking it, that no man is more familiar than is the physician with the sad results of want of education. He compares ignorance to some brute force stored up within the bowels of the earth, and which goes on accumulating till at last it bursts forth in fury, an engulphs a whole city, or destroys a nation. Let us, he says, control this force; let us find an engine through whose aid we may direct it to useful purposes. The engine he believes to exist in "the superior force of truth." Pilate said "What is truth?" and a couple of days might not ready to "A Physician's" proposition by a similar query. But the broad fact remains the same, that education is a great controller of at least the coarser kinds of vice. Therefore the author urges upon the Government to take some means to make education compulsory. We think we can recognize a brilliant and distinguished member of our profession in the opinion laid down, and the vigorous character of the arguments. Still we cannot agree with him that a system of education, similar to that [illegible] would be tolerated in [illegible] while the liberty of the subject is so much vaunted as it [illegible].

Chapters on Organic Life. London: Hardwicke. 1868.

Here is a book, just published anonymously, but written, we believe, by a medical man in a very large practice. Its [illegible] entirely misrepresents the character of the work, by leading to the supposition that the subject-matter relates to general biology; [illegible] the whole of the contents seem to [illegible] that the reason why man is provided with a considerable length of intestine is that Nature intended him to feed on the [illegible] passed from the rotten faecal matter which, if it were immediately thrown out of the body, would be so much valuable material lost. The grand climax in the author's startling hypothesis is that the colon is what he calls a manure organ, and that the difference between a plant and an animal is that the former grows where it can and manure, while the animal forms his own manure (lives on it also), and carries it about with him. Read this piece of scientific sensationalism — "We, however, the animals, derive from the matter of the soil [illegible] by the vegetation, and as plants do not possess organs for storing them, they are immediately used and disposed of. Not so with animals, for no animal which eats, digests, and [illegible] from the decreasing process would be [illegible] and hence we see a storing organ provided for the purpose, and, being provided, we cannot say that this is only a reservoir, or its contents useless, awaiting the animal's convenience to get rid of it. It is much more than this. It answers to, and corresponds with, what the earth and its stores [illegible] vegetation, and no other philosophy can [illegible] such [illegible] and the animal is compelled to [illegible] manure to nourish the [illegible] from which [illegible] to its [illegible], as the grass from [illegible] vegetation," etc., etc., *ad nauseam*. What filthy philosophy! What [illegible]! Can the author be in earnest? We [illegible] thought an [illegible] intelligence would have prevented such a display of nonsense as [illegible] the volume before us. The author, [illegible] he may be, is shamefully ignorant of modern science, or he would [illegible] the analogy [illegible] the [illegible] the resemblance between the manure of plants and animals, [illegible] to the ground [illegible] the most inveterate manure, and [illegible]

an atom of scientific fact in it from end to end, and none of

By J. K. [illegible], M.B. [illegible]

Mr. Spender is Surgeon to the Bath Mineral Water Hospital, [illegible] empiricism, and while it expresses the author's belief that in [illegible] views as to the relation of ulcer to obstructed circulation are being severely questioned by certain well-known authorities, [illegible] Mr. Spender, who argues strongly in support of the doctrine that retarded venous currents are one of the most fertile sources of ulcer of the legs. His chapter on treatment of ulcers, but it will give many a useful hint to the practitioner. Speaking of eczema, he refers to the value of tar ointment, which he believes exceeds all other local applications in efficiency. By tar ointment he does not [illegible] pound diluted with a large quantity of chalk ointment and [illegible]. He gives very [illegible] Mr. Spender's work should be read carefully by Surgeons and general Practitioners.

[illegible] M.D. [illegible] M.D. [illegible].

The first number of this journal has just appeared, and its contents deals with therapeutics in the widest sense of the word, that is to say [illegible] M. [illegible] H. [illegible] the [illegible] is [illegible] tion," in which he gives ample instructions for the use of this instrument, and the mode of injection, and dose of morphia, and [illegible] Dr. Anstie [illegible] of Foreign and English books, a Clinique of the Month, Extracts from British and Foreign Journals, "Notes and Queries," and [illegible]

"[illegible]" July [illegible]

[illegible] on [illegible] by Dr. Hasfield Jones, F.R.S.

English Correspondence.

[FROM OUR OWN CORRESPONDENT]

London, July 21st, 1868.

THE Medical Council has closed its session, and, as usual, all we find in the shape of result is *vox et prætærea nihil*. Were [illegible] of questions relating to medicine, and supported by those who compose its members, this would be a matter of little [illegible] costly institution, existing upon the taxes levied on an overworked and under-paid profession. This is no exaggerated statement. What did our "circumlocution office" cost us for its operations during the session just concluded? Not less than £1,[illegible]. But this is not the worst feature of the case. Not only has an extravagantly large sum been expended without anything of practical utility to set-off against it, but the money [illegible] about £20. The time, I think, has come when some steps should be taken in Parliament to remodel the Council, which, as it is now constituted, is a useless body; or, at least, a corporation whose labors are of little benefit either to the profession or to the public, and yet are paid for at a rate a thousand times higher than their real value. What has been achieved this year by the Council? The Lunacy Acts, so far as they prevent a medical man giving a certificate of lunacy of a patient not residing in his part of the United Kingdom, were brought under consideration of a Committee, and a letter was drawn up and addressed to the Home Secretary, requesting an alteration of the Statute. A letter was read from the Medical Department of the Privy Council, in which it was urged that the importance of vaccination should be recognized by the Council and all licensing Boards, and that students should be submitted to practical examination on the subject. Dr. Storrar firmly supported this view, but as yet no action has been taken. Dr. Acland spoke of the great importance to medicine of a knowledge of therapeutics, and proposed that a grant of £100 should be given to Dr. Richardson to work out the question of anæsthetics; but he was quickly silenced. Here, I think that, in point of expediency, Dr. Acland was right; but it must be confessed that the laws embodying the Council give it no powers such as those Dr. Acland desired to exercise. It is, indeed, much to be regretted. What might not have been achieved for practical medicine, had the large sums of money expended by the Council been devoted to therapeutical investigation! How long is this gross scandal to continue? How long is this terrible "old man of the sea" to remain on the shoulders of our brethren?

What is to be done with the out-patient department of our large hospitals? This question assumes a considerable importance [illegible] as a [illegible] the [illegible] the *Medical Teachers' Association*, has extended to the Medical [illegible] is strenuously advocated. The change proposed is this: to utilize the out-patient department for the purposes of teaching. Now, anyone who knows anything of this department in London hospitals, is aware that an unhappy assistant physician is compelled to see, examine, and prescribe for about 150 or 200 patients every day he visits. The duties as they are discharged are, I need hardly say, the merest farce, for it would be an absolute impossibility to attend properly to even 150 persons in the course of three hours. If we suppose, then, that the new proposal comes into operation, we shall have the assistant physician prescribing for, and giving a clinic on, about 150 [illegible] The [illegible] the [illegible] has been [illegible] appointed

to some of the reformers, and so they have bolstered up their plan by suggesting that all the commoner cases shall be visited at their homes by the students; a compromise which is even more objectionable than the original idea. Why, there is no hospital in London that would tolerate such a mode of dealing with patients, *firstly*, because it would be opposed to the interests of the charity; *secondly*, because it would lead to serious mistakes on the parts of the students, and would involve the Governors in serious broils with the legal authorities and the public; and, *thirdly*, because it would be an extension of a very improper practice, which, I am sorry to think, holds good even now, *viz.*, handing over the patients to be treated for grave ailments by young men often without either experience or intelligence, and invariably without a legal qualification. An attempt is being made to carry out this idea at St. Mary's Hospital, but I may tell you that the Board of Governors is totally opposed to it, and that, should the scheme be approved by the Medical Officers: it will be as certainly rejected by the real supporters of the hospital, and, if I may add my opinion, very properly so.

You may remember that I some time since spoke of the injustice of the King's College officials to one of their most active and distinguished teachers, Dr. John Harley, in compelling him to resign his post of Assistant Physician to the Hospital. It is in a corresponding degree gratifying to know that at least Dr. Harley's friends and pupils were not of the same opinion as the authorities. On the 17th instant, his former pupils met, and presented him with a testimonial, in the form of a beautiful copy in silver of the Cellini Vase, in token of their sincere regard, esteem, and regret on the occasion of his retirement from King's College, London. The address, which accompanied the testimonial, was suitably engrossed on vellum.

The meeting of the *St. Andrew's Medical Graduates Association* on Monday (20th) last was of more than ordinary interest, since the discussions related almost entirely to Dr. Richardson's candidature for the representation of the United Universities. The Report of the Council expressed the opinion that the representative of the University ought to be a medical man, and that the members of the Association should be asked to support Dr. Richardson in his candidature. Dr. Richardson then addressed the meeting, and, having explained that he had no ambition to become a Parliamentary man, would, nevertheless, stand as a candidate, if supported. But inasmuch as a man who goes into Parliament honestly undertakes hard work, he would not undertake to pay a penny, nor would he countenance any expenses but those which were absolutely necessary. As to politics, he would enter Parliament as a member, independent of all party, and would support those measures which he thought good, from whomsoever they might come. He considered old foundations which had been proved good, better than new ones which had not been proved. Dr. Prosser James said that he was also a candidate, and begged that the members would accord him their support, but no one seems to have responded to his appeal. It was curious to see how general politics and polemics got mixed up in the matter. Dr. Drysdale declared he would support no one who would not vote for the disestablishment of the Irish Church, and Dr. Martin declared himself as equally decided in the opposite direction. Dr. Richardson's opinions tend towards conservatism, and he is quite opposed to the disestablishment of the Irish Church. In all probability, Dr. Richardson will leave the field to Professor Lyon Playfair, who seems at present to have the largest and most influential support.

It was some time since proposed to the Comitia of the College of Physicians that a certain number of registered medical practitioners, of mature age and good standing, should be allowed to obtain the Licentiate without passing the examination. The Comitia met on Tuesday last (21st), and I am sorry to find that the proposal was withdrawn. The grounds on which the Comitia declines to adopt the proposal are those which have ever been opposed to every reform from time immemorial. They formulate two objections: (1) that a number of persons might be admitted over whom they would have insufficient control; (2) that it would injure the standing of several old Licentiates, who have, at great pains and in the high old age, submitted to be questioned by the Examiners. Could any objections be more puerile than these? Why should the condition of the newly-conferred license be to place the bearer (at risk of cancelling his diploma) under the control of the College? And what change for the better was ever thoroughly retrospective? The Council of the College is reduced to a lamentable state of "old bogeyism," when arguments such as these can influence their minds.

The British Medical Association, under the presidency of Dr. Stokes, of the University of Dublin, will hold its meeting at Oxford on the 4th, 5th, 6th, and 7th of August next. The section of Medicine will be presided over by Sir W. Jenner, that of Physiology by Professor Rolleston, that of Surgery by Mr. Paget, that of Midwifery by Sir C. Locock, and that of Public Medicine by Mr. Simon. Several interesting papers are promised. Mr. Paget is to read a paper on Stammering with other organs than those of speech. Dr. Russell Reynolds will read a paper on certain Affections of the Vaso-Motor Nerves. Dr. King Chambers will read a paper inquiring "How shall we make our daily experience advance science?" This last is most important, and I shall be glad to know how Dr. Chambers proposes to answer the query.

Progress of the Medical and Collateral Sciences.

The Syphilitic Affections of the Nervous System.—On the subject of a memoir recently sent in to the French Academy by M. Lagneau, M. Cloquet, who presented the work, said that it contained an immense deal of original matter, and was of a very high value. M. Lagneau has given a very comprehensive clinical history of the extension of syphilis to the different divisions of the nervous system; and he states, among other conclusions, that syphilis may give rise to all the neuroses, and especially to epilepsy, change of sensibility, and paralysis.

Use of Ergot in Hæmoptysis.—In the *British Medical Journal* for June 27th, Dr. Horace Dobell advises the employment of ergot in cases where other remedies have failed, in doses of twenty minims every three hours. He administers it in combination with digitalis, gallic acid, and various other substances. He states that he has seen wonderful results from this practice.

Caffeine used subcutaneously.—In an article on "Hypodermic Injection" in the July No. of *The Practitioner*, Dr. F. E. Anstie gives his experience of the value of caffeine in neuralgia and insomnia from chronic alcoholism. He especially records two cases, the dose employed in each being a grain. In one instance of severe neuralgia of the superficial branches of the circumflex in the shoulder, two successive injections of caffeine over the biceps appeared to cut short the malady altogether. In a case of dorso-intercostal neuralgia attending shingles, the patient was injected daily for five or six days, with the effect of notably mitigating the pain on each occasion. In a woman who had drunk to excess for years, without ever having had distinct delirium tremens, but who could not sleep at all, and was a prey to distressing visual hallucinations, a notable improvement was effected by caffeine. She was injected twice a week for three weeks, and on each occasion got great temporary relief. These cases of Dr. Anstie's are of the highest interest, for they show of how much benefit subcutaneous injection may be even in cases heretofore considered out of its sphere.

Hair as a Character of Race.—M. Pruner, whose "Researches on Anthropology" are already well known to our readers, has just published his more recent "Researches on the Race Characters of Hair." His memoir contains several drawings of sections of hair as seen under different microscopic powers, and it must doubtless be in many respects, and for a long time, the work of reference on this subject. The author considers that more is to be learnt from transverse section than from any other prepositions; for in this way, he says, one is able to ascertain the size of the hair: a point of great import in diagnosis. He states that he has established the fact that the hair of the negress is not always black, but that, on the contrary, it is sometimes red, and is occasionally met with of an ashy color. Among two hundred specimens of hair from natives of India, only one occurred of a straw color, and this, he says, might have been of foreign origin. In his opinion, the hair of every race south of the Himalayas is jet black. M. Pruner establishes a remarkable difference between the Semitic and Aryan races. The latter shew a regular oval out-turn in the transverse section of the hair while the out-turn of the hair in the former is angular.

A new Microscope Condenser with a Blue-tinted Focal Lens.—The Quarterly Journal of Microscopical Science for July

atrophy of the optic nerve. (7) Optic neuritis and neuro- generally seen in both eyes. (8) In lesions of the brain and alteration in motion, sensation, or intelligence, always indicate

Experiments on the Nerves of Invertebrates.—M. J. the functions of the different nerves in the higher molluscs, the pallial nerve (nerve of the mouth) in these molluscs have a conclusive action. Section of the great visceral nerve, while Electrization of the peripheral end of this nerve arrests the mouth in the median line at the lower part, one divides the become reduced to mere points, and one side of the body is less or more pallid. If, now, electrization be applied to the peripheric end, the motion and sensation are temporarily restored, and the body.

A note on this subject. He says that, whatever may be the nature of hepatic colic, it is, in his opinion, quite certain that we must rely on reflex action for the expulsion of biliary calculi. The experiments in dividing the cord, the observations of Marshal Hall in cerebral paralysis, and the well known phenomena of the best means of intensifying reflexation is to remove the parts in which it occurs from the influence of the brain. For this

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records several instructive cases, and quotes the following as the *anæsthesia*, partly from the absence of capillary circulation, and with one or more white spots; there may co-exist one or two similar spots, in which there is an accumulation of pigment.

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

By J. Fayrer, M.D.

Present: Dr Fayrer, Dr Ewart, Professor of Physiology, and Mr Sclater, of the Indian Museum.

August 15th, 1868.—The object of these experiments was to make careful observations of the symptoms during the action of the poison, to note the pathological changes during life and after death, and the microscopical appearances of the blood of a healthy animal in the healthy state, immediately before submitting it to the influence of the snake-poison, and to compare these appearances with those of the blood of the same animal after death from the snake-poison.

The examination was made with the greatest care by Professor Ewart and myself, with two microscopes, the power used being 500 on an inch, and they were repeated many times.

Experiment No. 1.

At 11-59 a.m., a small pariah dog was bitten in the left hind-leg, just above the carpal joint, by a Daboia, the same snake that had been used in former experiments. The dog was put near the snake, which, though excited and hissing loudly, appeared disinclined to bite: on being irritated, it struck the dog in the leg as described; the wound bled freely.

It was nearly five minutes before the dog shewed signs of the effects of the poison. He then began to stagger and seemed weak, and was unable to co-ordinate the muscular movements of the limbs.

At 12-6 he lay down, breathing heavily; at 12-7 he rose and staggered a few steps and vomited.

12-9.—Gradually subsided on to his left hind-quarter; looks vacantly about him, but intelligent when spoken to. There is no indication of any suffering.

12-11.—Walks about when led, but very sluggish, and wants to lie down; weak in the bitten leg.

12-18.—Is walking slowly, staggering in the hind-quarters; has his head depressed, with the neck stretched out. Cold water dashed over the head seemed to rouse him partially.

12-22.—Lies down, weak and exhausted; no convulsions. Looks as though he were going to sleep. Takes no notice when spoken to.

12-42.—Lying down sluggish, and disinclined to move; can walk a little when roused.

12-46.—Respiration deep. Lying on the right side; appears generally paralyzed.

12-57.—Insensible; catching respiration.

1-5 p.m.—Dead.

Died in 66 minutes.

Post-mortem, soon after death. Part above the ankle-joint, where the animal was bitten, oedematosed to an extent of 2 inches, and discolored by dark bloody fluid.

Decomposition commencing.

A small spot corresponding to the points at which the fangs had penetrated.

Blood in femoral vein fluid.

Thorax opened. Lungs pale and bloodless; completely collapsed when the thorax was opened.

Heart's right cavities contained fluid blood. The blood pressed out of the heart and from the great vessels in the thorax was fluid, with no tendency to coagulate. The left side of the heart empty.

The liver healthy. Spleen enlarged. Stomach contained a quantity of food. Kidneys healthy.

Brain taken out and carefully examined: it was healthy in all its parts, perhaps more anæmic than quite natural. The blood was kept until next day, and there was no coagulation.

Up to 1-54 p.m., no *post-mortem*.

The blood was most carefully examined before the dog was bitten, during the operation of the poison and after death. There was nothing suggestive of the changes described by Professor Halford. The red corpuscles remained altogether unaltered. In one of the examinations after death, a few more of the white corpuscles were seen than we had observed in other specimens, but there was no peculiarity about them; and after most careful and repeated examinations, we could detect nothing that confirmed Dr. Halford's observation.

Experiment No. 2.

A healthy medium-sized dog was bitten, at 12-40, in the left hind-leg by the Daboia Russelii. It was not certain that the fangs penetrated. The mouth of the snake was also brought in contact with the right thigh and the lower part of the abdomen, and the fangs were struck lightly into the parts. The snake was one that had been used on former occasions, and was weak, and probably almost exhausted of poison.

1-20 p.m.—Lies down; looks depressed; evidently affected by the poison.

2-3 p.m.—There has been very little change during the last 40 minutes. Lies down quietly. There are abdominal contractions, as of irregular action of the diaphragm.

5 p.m.—When roused moves about, but is sluggish and weak. Steps irregularly with a staggering gait, crossing the hind-legs, at other times keeping them wide apart. After walking a little, the steps became more regular and steady. The dog having usually been fed at this time, food was offered, but he refused it.

6-30.—Quiet; no symptoms of pain or convulsions; perfectly conscious; when spoken to, responds readily by raising his head and wagging his tail. Is insensible to pain if irritated in any part of the body.

In some of the former experiments it seemed as though anæsthesia were produced on the limb that had been bitten.

The dog gradually drooped, without any sign of pain; no spasm. Died at 8-15 p.m.

Bitten at 12-4.

Died at 8-15.

Eight hours and eleven minutes after being bitten.

In this case death was very slow and painless. It seemed more like a gentle lethargy stealing over the animal, and gradually increasing until death. There was no sign of pain; no convulsions; just before death the defecation was of a muco-sanguinolent character, having been perfectly natural before being bitten. The body was examined soon after death.

On raising the integument, it was found that the deepest wounds from the snake's fangs had been received in the middle of the lower part of the abdomen, but they had not penetrated deeper than the adipose tissue.

Several small punctures (4 or 5) were found in the side of the abdomen and in the inner part of the thigh.

The *post-mortem* appearances [illegible] exactly the same as in the former case, and the blood, when examined, was healthy in character.

The blood was watched for 14 hours, and it did not coagulate; and, being carefully examined under the microscope, presented no change from the normal condition.

The results of these experiments, which were conducted [illegible] and every precaution [illegible]

tered under the same conditions.

EXPERIMENT No. 3.

comparatively feebly poisonous. The snake seemed indisposed to bite until irritated, and the pig stepped on him, when he seized it by the right forefoot, just above the hoof, and drew

The pig made no attempt either to attack the snake or defend himself; he merely tried to get out of the way. The snake bit at 11-55 a.m., and as the pig was lying down, the bitten leg was

11-59.—Got up and ran about the room; the bitten limb evidently weak. Lay down again; right fore-leg twitching in a convulsive manner; is generally restless.

convulsed in lying down; places it under its body, as though to prevent the involuntary movement; working the mouth; making

12-5. Roused; rests himself against the wall.

much weaker.

12-17. Lying in the corner of the room with his left side against the wall. Twitching occasionally in the bitten limb

thigh and in the snout.

1-35.—Twitching in the bitten leg.

extremity. Twitching also of the facial muscles and of the stretched out.

2-15. Roused him up; great loss of nervous and muscular power. When he got up, he did so with much difficulty; propped himself up against the wall; staggered and fell down.

2-25. Very lethargic; cannot stand; when placed on his legs, conjunctivæ pallid. The right fore-leg first bitten is ecchymosed much up to the elbow-joint. Considerable twitching in muscles of the face, showing that the poison has affected this part in the same way as it has the muscles of the fore and hind-legs.

fixed; insensible to light; pupils dilated; irides unacted upon by light; almost comatose.

Bitten first at 11-53.

Bitten second time at 1-32 p.m.

Died 2-50, nearly 3 hours after being first bitten.

venous system up to the right auricle and ventricle, which were distended with blood. Sections of brain, thalamus, and corpus a vascular point to be seen.

Lungs quite collapsed and anæmic; left ventricle and auricle empty.

Liver, kidneys, &c., healthy.

ecchymosed; coagulum marks the entry of the fang. Tissues discolored from rapid death (local) and decomposition.

of fang indicated by a point of coagulum of a dark colour.

Bite on right ear also ecchymosed, also snout, in both of which places he was bitten. Blood coagulated in all the veins

masses like piled coin in rouleaux.

The fact that this pig was twice severely bitten, and that

bably have died in less than half an hour.

It is true that the first Cobra, though a large and powerful

the snake-catcher, freshly caught.

as if he had been roused from a state of overpowering nervous oppression. Breathes slowly and imperfectly; does not half-fill his lungs.

Bitten at 12·53.

Died at 1·14 p.m.

Dead in 21 minutes.

This is further proof of the deadly action of the poison on indigenous snakes.

Experiment No. 5.

At 12·55 p.m., a large Cobra was bitten by a full-grown, freshly-caught Cobra; they were both of one variety, that marked with one ocellus in the hood, the *Keauteah* of the snake-catchers.

The scales were scraped off, and the snake was made to imbed his fangs deeply in two different places about 10 inches from the head. There could be no doubt of the penetration, or of the injection, of a large quantity of poison.

At 12·59 five drops of Cobra-poison, taken from the snake, were injected, by means of the hypodermic syringe, into the muscles of the Cobra's back.

1·30.—No effect produced; the Cobra is as lively as ever.

1·45.—Still unaffected.

4·30.—Still unaffected.

18th August, 5 p.m. The snake is as well as ever.

This experiment goes far to prove the immunity of the Cobra from the noxious effects of the poison of its own species.

Experiment No. 6.

1·20 p.m. Civet cat (Viverra Malaccensis) bitten by a Daboia. The snake struck in more than one place.

1·25.—Appears paralyzed.

1·26.—Appears almost dead.

1·30.—Still breathing imperfectly; stretches his legs as if from spasms.

1·32.—Got up on his fore-legs and vomited; lying down exhausted.

1·37.—When roused, he seized a stick, but is evidently half paralyzed in the hind-quarter; lies down again on left side.

1·40.—Gets up again when irritated, breathes hurriedly, and lies down at once. Evidently very drowsy and much exhausted.

1·47.—Tries to get up of his own accord; finds he cannot; rolls over on other side; right hind-leg paralyzed. Continues restless and endeavouring to move, and has again succeeded in changing his position.

1·57.—Lying flat on side with all his legs stretched out. Can be roused, but his hinder extremities still paralyzed, and he does not give fight as before. Is uneasy and restless.

2·12.—Roused; walks about much better, but his right hind-leg is very weak; quite paralyzed. Put into his cage; gave much more fight.

2·30.—Seems reviving, but he is restless and manifestly uncomfortable; lying down, and at full stretch, on side.

4·15.—Purged freely; very low; evidently at the point of death.

4·25.—Convulsive movements for two or three minutes; stretching the limbs, &c.

4·36. Dead.

Body examined, showed the animal to have been bitten on the nose, on the side of the head (in the temporal muscle), and in the thigh.

The *post-mortem* appearances of the viscera were like those in other animals.

This viper was the same that had been frequently used in other experiments before described, and must have been considerably weakened. The deadly nature of the snake is manifest from this continued power of inflicting mortal wounds, and it is probable that it has the power of rapidly secreting fresh poison. It is regarded with great dread by the snake-catchers, and evidently with good reason.

ON CHOLERA.—No. V.

By C. Macnamara,

Surgeon to the Calcutta Ophthalmic Hospital.

M. Sawas, a member of the Cholera Conference assembled at Constantinople in 1866, thus describes the origin of the European cholera of 1830-31: "In 1829 it broke out at Orenburg, which maintained extensive commercial transactions with Bokhara. From Orenburg it passed to Kiakhta, a town on the frontier of the Russian empire, and the seat of a great fair. From Kiakhta the disease was communicated to Cabul in 1829, after the fair, and thence it passed progressively to Herat and Meshed, and broke out in the following year in Teheran."* From the evidence, however, which I have already adduced, I trust I have made it clear that the Bombay Presidency, Scinde, and the Punjab, were under the influence of an invading cholera from the east, during the year 1827, which had reached Khiva† and Herat in 1829; and I shall now endeavour to trace the continuation of the epidemic from India, through Europe, to America.

On the 26th of August, 1829, the disease broke out in the city of Orenburg; it was not, however, until the "10th of September that its true nature occurred to the physicians of the place."‡ Between the 9th and 25th of the month, 57 cases had been reported, and before the 21st of October, 747 people were attacked by the disease. By the 20th of November, the epidemic had entirely disappeared from the city, into which, in the first instance, it was said to have been imported by caravans from Bokhara.§

About the 23rd of September, cases of cholera began to appear in other parts of the Orenburg Government; and the first place in which it was known to exist was in the fortress of Rasüsna, sixty miles west of Orenburg; and, between the 3rd and 4th of October, it appeared in various villages and forts to the west and south-west of the district. The epidemic influence extended about two hundred miles to the north and north-west of Orenburg, and about sixty miles to the westward; this space it traversed between the 26th of August and the 6th of February, but the greater part of it was visited by cholera before the middle of November. On the 23rd of February the disease had well nigh disappeared,‖ though it still cropped up here and there, being generated, for instance, at a few advance posts beyond the sanitary cordon round the infected localities.

We witness, therefore, in this, the first detailed invasion of cholera into Europe, phenomena precisely similar to those I have described as occurring in India: the invading cholera progressing forward from east to west, and north-west, after a time almost entirely subsiding over the invaded area, but only to burst out again in these localities, and simultaneously to be engendered over a vast tract of country to the west and north-west of its former limits.

We must pause for an instance to notice the progress of the epidemic from India directly westward into Persia. I have already quoted a passage from the [illegible] as to

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* Proceedings of the International Conference at Constantinople, 1866. Constantinople, 1868, pp. 313 and 339.

† The Edinburgh Medical and Surgical Journal, Vol. 36, p. 122.

‡ Ibid.

§ Proceedings of International Sanitary Conference at Constantinople, 1866. Constantinople, p. 305.

‖ Medico-Chirurgical Review, Vol. 16, 2nd series, p. 289.

In July it was generated at Tiflis;† it soon after appeared in cholera on the 17th of September, at Kharkov, in the south of provinces of Russia.

Throughout the winter of 1830-31, there was a decided lull in the progress of the disease, although cases of cholera were Solitary instances of the disease were observed at Cracow, Kiel, sanitary cordon at the close of 1829.

True to its character, we find the cholera of 1830 in full force again in the spring of 1831. It first manifested its renewed force

† Hirsch, p. 96. London, 1883.

unexplored regions of Africa. However this may be, the whole saw, Riga, and Archangel, were more or less under the appearance at Constantinople in July, and again in Bulgaria; Cracow, and, as we have already noticed, earlier in the year at it at Archangel in May. In the beginning of August it was at

In St. Petersburg the first case of cholera occurred in June; surround the city by a sanitary cordon, the whole power of the Emperor being exerted to prevent infected persons from entering the capital, but without the slightest effect; at its appointed time, the disease was generated throughout the city, and con- August.

disease did not spread from Vienna far to the south or west, notice that cholera remained, as it were, stationary, and in a suppressed form, during the winter of 1831-32, in Hungary, burg, Bavaria, and scarcely into Hanover, although these bordered on infected states,—an immunity not to be accounted for by the existence of any natural boundaries, as mountains or infected principalities and those that escaped; many have, there- taken."§ Those who have followed me in this history will,

1831-32, which, true to its characteristics, progressed from east

further advanced along its northern than its southern limits, and towards the close of the year 1831 we find the same rule

Hamburgh. "The persons first attacked in the port resided on the quay, and were exposed to intercourse with the shipping. No communication, however, was satisfactorily traced between these persons and the particular ships referred to, nor were any of these ships known to have persons sick with cholera on board."* Whether it is more probable that these non-infected ships should have introduced cholera into England, or that it should have been generated there in obedience to that mighty force which had caused it to move onwards from Bengal to the west of Europe, I leave it for the reader to judge; of one thing we are quite certain, and that is, the inhabitants of the populous village of Debtford, close to the Ayres quay, "where the disease was very prevalent and fatal," escaped its influence; as did the agricultural villages in the immediate neighbourhood of Sunderland.† The truth is, that cases of cholera had in reality occurred in Sunderland as far back as the 5th, 14th, and 27th of August—two months before the declared importation of the disease.‡ Cholera subsequently appeared at Newcastle, Gateshead, Edinburgh, and in London in February. The number of deaths in England amounted to 97 in November, 282 in December, January 614, February 708, March 1,519, April 1,401.§

The influence of the invading cholera of 1831 having failed to pass beyond Germany, France remained absolutely free from the epidemic until the following year. On the 24th of March, however, cholera burst out in the very centre of the country at Paris. According to M. Gendrin, on the third day of the appearance of cholera, he received patients from every district of Paris into the Hotel Dieu. The patients' distant residence, and opposite professions, preclude the probability of their having derived their disease from human contact. Of the first ninety-eight cases admitted into the hospital, no less than ninety-six died.‖ Within the first week of the disease, the mortality reached 500 per diem, and the cases to four times that amount; in eighteen days no less than 7,000 persons had died of cholera in Paris. M. Meurthe observes that the Luxembourg quarter contained about 20,000 inhabitants, and of these 7,532 were indigent people, and 13,330 of the better classes. Among the former, no less than 4,500 suffered from cholera, and only 2,500 of the latter.¶ The village of Issy, situated on the road from Paris to Versailles, totally escaped, although surrounded by other hamlets—Vanores, Vangirara, Beau, Grenelle, which were all cruelly ravaged by the disease. M. Gendrin remarks that all other diseases participated in the general features of the epidemic, exhibiting abnormal epiphenomena of a choleraic kind. This tendency was observed by almost every physician of eminence throughout Europe during the years 1830-31-32.

At the time of the advent of the epidemic into France, it was also generated in Ireland, and spread over many of the principal towns in that island. The disease was re-produced in England, and, before the end of August, had visited Hull, York, Leeds, and several other large towns; the total number of cases in England, however, amounted only to 14,796, and of these 5,432 died.

The progress of the invading cholera from east to west was not destined to be limited by the Atlantic. On the 8th of June, 1832, it broke out among the inhabitants of the city of Quebec, and on the 10th at Montreal. On the 23rd of the month cholera appeared in New York, and on the 5th of July in Philadelphia. It spread over nearly the whole extent of the United States before the end of the year. The epidemic still continued its original course, attacking, for instance, the towns and villages along the banks of the St. Lawrence, then following the borders of Lake Ontario, until it entered lake Erie, visiting Detroit and Amerstbergh on the 6th of July.

It will be observed that as yet we have heard little or nothing of cholera in Spain or Portugal. These countries appear to have escaped the influence of the epidemic until 1833.

The disease was said at the time to have been imported into Portugal. "The London merchant steamer sailed from England to Oporto on the 25th of December, 1832, and arrived at the mouth of the Duro on the 1st of January, 1833, having lost seven men on the passage by cholera. The troops which she took out with General Solignac landed immediately at Foz, about ten miles west of Oporto."* Cholera appeared at Foz on the road to, and in Oporto before the 15th of January, and spread to Coimbra and Gallicia. The circumstances of this case were reported on the 8th of May, 1833, by Mr. Lardner, and in a subsequent number of the *Lancet* (November 22nd, 1834) he gives a more detailed account of the phenomena of the disease. In the first paragraph of his second letter to the *Lancet*, he remarks, "I know that the *Raindu* frigate in Vigo Bay, while at anchor alongside the *Donna Maria*, was severely attacked with cholera in its most malignant form, while in the latter (although free and constant communication existed between the two vessels) the disease never made its appearance." It appears, moreover, that the sick men landed from the *London* were at once confined in the Foz hospital, "which was well calculated, by its locality, to hinder any communication from being made between the patients and Oporto." Very shortly afterwards, however, the disease appeared in the very heart of the city. A month afterwards Aveiro was affected with cholera. There was every reason to suppose there was little, if any, communication between the cities, Aveiro being in the hands of the Miguelites. The disease did not appear in Lisbon till June; but it is most difficult to gain any precise information on these points, or as to the history of the epidemic in the interior. The press was gagged, and the circumstances of the disease not allowed to be discussed.

In Spain quarantine was most rigorously enforced. Every traveller from an infected district was subjected to the performance of quarantine; and if he entered Spain without having gone through the formality, he was liable to be punished with death, his apparel burnt, and goods seized; the same punishment being extended to those who received him.† In spite of all these precautions, cholera raged with great violence in many of the provinces of Spain during the summer of 1833‡ and 1834.

The disease broke out on the 26th of February, 1833, Havanah, and continued to the 20th of April. During this period no less than 8,253 persons were destroyed in a population of 65,000 souls.§ Later in the year the epidemic was generated with frightful virulence in Mexico; before August no less than 15,000 individuals are said to have perished from it.‖

Throughout the year 1833 we hear of cholera being re-produced over almost the entire area through which we have traced it during the preceding years. Cases occurred in the majority of the large towns of Europe and America. Never-

* Drs. Baly and Gull's Reports on Cholera, p. 21. And Cholera has recently appeared at Newcastle and Gateshead. By T. M. Greenhow, p. 104.

† Cyclopædia of Practical Medicine. Edited by Drs. J. Forbes, Tweedie, and Conolly. Vol. I, p. 199. London, 1833.

‡ Quarantine. By Gavin Mellroy, M.D. London, 1847, p. 30.

§ Report on the Mortality from Cholera in England, 1848-49. By Mr. W. Farr.

‖ Monographie du Cholera Morbus Epidemique de Paris. Par A. M. Gendrin, Paris, 1832.

¶ Historique du Cholera Morbus dans le quarter Luxembourg. Par M. H. Boulay de la Meurthe, Paris, 1832.

London Medical Gazette, Vol. xii, p. 123.

† Idem, p. 60.

‡ [illegible]

§ [illegible]

‖ [illegible]

of the south of France; particularly at Marseilles and Toulon." Towards the end of June it was at Villafranca, and a few days same month at Genes. It extended along the coast of Genoa, as far as Livourne, and in November broke out at Venice, Trieste, the spring of the following year, when it was reproduced over pieces of glass were inserted to admit light † The epidemic appeared at Ancona and in the island of Sicily, in Rome; of 9,572 persons attacked by cholera, 519 died ‡

quarantine harbour. It is remarkable that this very house was

The deaths among the civil population of the island between June and October, when the disease ceased, were 3,893: among the garrison (including women and children) averaging 30·70; the cases were 315 and the deaths 78. The Mediterranean fleet suffered considerably, the first cases occurring in June. In some of the ships the earliest attacks were said to have occurred as they neared the coast, and before entering the harbour or under quarantine both before and after the outbreak of cholera.

month after it appeared in Valetta. Palestine was under the influence of cholera in 1837,‖ and so also was the African shores of the Mediterranean. On the 14th of October the disease for some time, the number of cases on the 17th of October amounted to 328.¶ Remarkable outbursts of cholera occurred

or an invading epidemic? If the latter, we should naturally look for its equivalent in India, for, so far as we have yet gone into the history of the disease, we know of no other locality from indications, though by no means complete evidence, of the existence of phenomena in the East explanatory of the above detailed facts.

I shall presently describe the history of a vast outbreak of epidemic cholera which occurred over the Madras Presidency in 1832-33-34; it extended along the valley of the Nerbudda, and into Bombay. In 1835, the Hadjez* was under the influence of cholera, and I have given evidence of its subsequent appearance throughout the basin of the Mediterranean in 1835-36-37, and at the same time of its being widely scattered over Europe. This outbreak of cholera, when viewed by the light of the epidemic of 1865-66, is certainly very suggestive; and I feel confident its history will yet become clearer as additional light is thrown upon it by those interested in these matters at home, and who can command documents and references from the various Government Offices, which it is impossible for me to examine.

We cannot dismiss this period in the history of cholera from our consideration without noticing one or two of the most doctrine of contagion, for the battle on this subject commenced with the appearance of cholera in Europe, and has waged with more or less violence ever since.

In the first place I may observe that there was probably never a greater effort made by the combined Governments of Europe to exclude an epidemic disease from their dominions by quarantine than that exercised in the case of cholera of 1830-31. I have already noticed the fact that in Spain, in 1833, an infringement of these laws was punishable by death. In our own Health in London, the following will give us an idea of the means by which it was hoped, in October, 1831, to stay the progress of the disease in England:—"Immediately separate the sick from the healthy;" conspicuous marks on infected houses, "rags, papers, old clothes, and hangings to be burnt;" "dead to be buried in the vicinity of the houses selected for cholera patients;" "all persons employed about the sick (including the Doctor, of course,) to be kept apart from the rest of the community;" "all articles of food to be placed in front of infected houses, and received by one of the family after the person delivering them shall have retired;" "all intercourse with an infected town and the neighbouring country to be prevented;" "troops, or a strong body of police, to be drawn around infected places, so as utterly to keep the inhabitants from all intercourse with the country."†

It is true that in very many instances the strictest possible internal quarantine did not succeed in excluding cholera. That such should be the result of attempts at land quarantine by sanitary lines in the populous parts of Europe, accustomed to the utmost degree of daily intercourse, cannot appear surprising. To look for the rigorous enforcement of quarantine in such expectation. And accordingly in Russia, Austria, and Prussia, where unlimited command of troops, and the despotic nature of the Governments, present great advantages for the establishment of internal quarantine, the sanitary lines have been every-

where overstepped by the disease again and again, after it had reached the more civilized parts of Europe.* As, for instance, in the case of Debrenzyn, in Hungary, which suffered more than any other town in the country, although guarded by a triple cordon.†

The greatest efforts were made to keep the cholera out of the Russian capital, by means of quarantine; but, as usual, these having signally failed, a strong double cordon of troops were still maintained around Larcozels and Peterhoff, to which the court and nobility, with their attendants, in all 10,000 persons, retired, and resided in seclusion (among them, I am sorry to say, were two English physicians.) In the beginning of October, the restrictions were withdrawn; and it was accurately ascertained that not a single instance of the disease had occurred within the enclosure, though it raged in all quarters around in the close vicinity of the lines.‡

"Kristofsky, situated in the middle of the populous islands of Petersburg and which communicates with them by ten magnificent bridges, and with the town by a thousand barges, which bring every day, and especially Sundays, very many people, who go to walk in the beautiful island, we say, has been completely preserved from cholera; there has not been a single patient in the three villages which it contains. During the cholera, most of the French players retired to Kristofsky, and not a single patient was found among them; while out of the small number of their companions who remained in town, many either died from the disease, or were seized with its most violent form."§

"On the St. Lawrence, immediately opposite to Montreal, and within a very short distance of the city, is a small island called St. Helena. Immediately upon the breaking out of cholera at Montreal, the authorities removed the military to "St. Helena." The people from the island went every morning to the city to make their bazaar, and mixed with the inhabitants of the infected city; but, notwithstanding this daily constant communication, there was never one case of cholera in the island during the whole time."‖

Colonel Tulloch states that, "Cases of cholera were first noticed in Quebec on the 8th of June, 1832, among a party of emigrants who landed there on their way to Montreal, in consequence of the steamboat in which they had embarked being overcrowded. On the following day a person belonging to the same party, but who had proceeded by vessel to Montreal, was attacked shortly after his arrival there, and within a few days the disease became general in the town."¶ Dr. S. Jackson, however, the consulting Medical Officer of Philadelphia, distinctly affirms that, although the emigrants were at first supposed to have transmitted the epidemic across the Atlantic, "a more close investigation into the facts connected with the commencement of the disease in these cities, served to destroy this supposition. It could not be traced to importation."

The Brig *Amelia* left New York, when cholera prevailed, on the 19th of October, 1832, with one hundred and odd passengers on board; from stress of weather they were confined below. After being at sea six days, cholera broke out among them. On the 31st of October the vessel was wrecked on Folly Island. Up to this period twenty-four persons had died of cholera, and several remained sick.

A boat's crew of wreckers was sent from Charlestown to save a part of the cargo, and immedintely after returning to the city one of them was seized with cholera and died. The patient resided in a most filthy part of the town, and was visited by "hundreds of curious people," but the cholera did not spread in Charlestown. The remainder of the wreckers were sent back to Folly Island, and during the passage two of them fell sick with cholera and died; they are described as of exceedingly intemperate and dissolute habits. The crew of the vessel had from the very first been placed under strict quarantine on the island. Of four negroes, the only persons left on the island by the proprietor, three died, one a child and two adults. Of the wreckers eight died; of the guard employed to perform the duty of a cordon sanitaire, and who were stationed about 120 yards from the sick, nine were reported severely ill, and one died. The three physicians in constant attendance escaped, but a nurse employed on the first wrecker, who died, fell a victim to the disease a week afterwards.*

The first case of cholera observed in the village of Moor Monkton, six miles from York, occurred on the 28th December, 1832. The disease did not exist at the time in the neighbourhood, or in any place within 30 miles. John Barnes, a labourer, had been suffering for two days from diarrhœa and cramp, when on the 28th December he was taken ill with all the symptoms of cholera, and died the next day. Barnes' wife and two other persons, who visited the sick man, were seized with cholera, but recovered. The son of the deceased man arrived. He had been apprentice to his uncle, a shoemaker, in Leeds; his aunt had died of cholera fifteen days before, and her effects were sent to J. Barnes without having been washed. The trunk containing the things had been opened by J. Barnes in the evening, and the next day he fell ill. This case is cited by the Cholera Commissioner of Constantinople in proof of the transmissibility of cholera by articles contaminated with choleraic matter, or soiled by their dejections.†

(*To be continued.*)

DIFFICULT CASES IN MIDWIFERY, OCCURRING AMONG NATIVE WOMEN.

By T. Murray, M.D.,

Civil Surgeon, Agra.

"The [illegible] advantage we obtain from [illegible] large [illegible] of the [illegible] most [illegible] and [illegible] are also [illegible]."

The following cases from my note-book may help to prove that [illegible], very generally prevalent, that native women are less subject to the accidents and difficulties attendant on [illegible] women in Europe [illegible].

I have had [illegible] during [illegible] midwifery, retained placenta, and puerperal fever, are by no means uncommon among native women; and I am informed that, in Native [illegible] and hamlets far away in the interior of the country, women often die *undelivered*. Obstetric medicine is certainly at a very low ebb among the natives in this part of India.

UNNATURAL LABOUR, MALPOSITION AND MALPRESENTATIONS OF THE CHILD; EVISCERATION.

CASE I.

P., [illegible] aged 19; fourth labour.

[illegible] was the wife of a respectable Brahmin [illegible] city, [illegible] in labour for about twenty-six hours [illegible]

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* Edinburgh Medical Journal, No. 57, p. 100.

† Lancet, 3 March, 1866, Vol. I, p. 277.

‡ Official Report on Cholera by Drs. Brown and Barry, p. 58, London, 1832. London, p. 260.

§ Observations on the Cholera Morbus, Par l'Ambassadeur de France en Russie. Paris, 1831, p. [illegible].

Report of the Commissioners on the Mauritius Cholera, 1856, p. [illegible].

‖ Report on the Sickness and Mortality among the Troops in British America, p. 246.

¶ [illegible]

* [illegible] Medical Journal, Vol. XIV, p. [illegible].

† [illegible] Sanitary Commissioners at Constantinople, p. 94.

[illegible] I was [illegible] 7 o'clock on the [illegible] 1862. [illegible] of the [illegible] by my Native [illegible] that there was [illegible] and that several [illegible] had been with [illegible] and had been [illegible] to pull the [illegible] away by main force [illegible] [illegible] perilous condition. The liquor amnii had escaped shortly [illegible] [illegible] much swollen and livid. I relieved the cord from pressure, but there was no pulsation in it, neither could any pulsation be felt [illegible]

The patient continued in great agony, the pains were strong, [illegible] about and exhausting her strength to no purpose. The vessels of her head and neck were greatly swollen and congested, the perspiration rolled in great beads from her forehead, and ever and anon her body was bent double; the muscles were fixed and rigid, and the hands tightly clenched, as though the [illegible] in a paroxysm of tetanic convulsions. I administered a soothing draught at once, and soon after placed the [illegible] the presence of chloroform. I next [illegible] but found this was impossible. I sat down and watched the case for a few minutes; but, notwithstanding the throes of the patient, the fœtus remained firmly wedged—not the slightest movement forward was perceptible. After two ineffectual attempts at turning, I determined to eviscerate.

[illegible] The woman lying on her back, her hips resting [illegible] and an assistant steadying each knee, I introduced the perforator with great care, guided by the fingers of the left hand, and, having felt the fœtal scapula, passed the instrument into the thorax through one of the intercostal spaces. Having made a free opening, I brought away the contents of the thorax. I next inserted the crotchet in the same way that I had introduced the perforator, carefully guarding the soft parts of the mother. In a few moments the body of the child collapsed, and, the pains coming on strong, [illegible]

I now removed the placenta, and, dashing cold water over the abdomen, soon obtained a good contraction of the uterus.

So overjoyed was the patient at the relief she experienced, that it was with difficulty she could be kept quiet in her anxiety to express her gratitude.

[illegible] household duties.

[illegible]

[illegible] on the 9th July, 1865. The case resembled the foregoing in almost every [illegible] it was a transverse presentation. Several midwives had been called in, and had tried hard to bring away the child by pulling violently at its arm, which was greatly swollen, with the skin peeled off in many places. I found it necessary to [illegible] recovery, and was about her work again on the twentieth day.

[illegible] kind when unassisted. I quote from Churchill:

"After the membranes have burst and discharged more [illegible] the uterus contracts tighter around the child, and the shoulder [illegible] increase considerably in violence, from the child being unable, from its faulty position, to yield to the expulsive efforts of nature. Drained of its liquor amnii, the uterus remains in its state of contraction even during the intervals of the pains; the consequence of this general and continued pressure is, that the child is destroyed from the circulation in the placenta being interrupted, the mother becomes exhausted, and inflammation, or rupture of the uterus and vagina, are the almost unavoidable results."

Churchill says, "If the uterine action be very intense, *turning* may be impossible without risk of rupturing the uterus."

And, again, "Should *version* be impracticable, we must open the chest of the child, and eviscerate; after which it may be extracted by the crotchet."

Spontaneous evolution, according to the testimony of Dr. Douglas, does not occur above once in ten thousand labours.

TWIN BIRTH AND OBSTRUCTED LABOUR; CRANIOTOMY.

CASE I.

S., Hindnee, aged 40; ninth labour.

I was called to see this woman about 10 o'clock on the night of the 15th November, 1862. She had been in labour from dawn of the previous day (about 29 hours). I found her much exhausted, with a quick intermitting pulse, and a countenance expressive of fear and anxiety. The child's head was greatly swollen and enlarged—hydrocephalic in fact; and delivery by forceps being impracticable, I performed the operation of craniotomy in the usual manner. The mother was quite well on the twelfth day.

CASE II.

M., Mussulmanee [illegible] 41, eighth labour.

I was [illegible] on the afternoon of the 26th February, 1867. She had been in labour two days. I found her very weak and exhausted; pulse quick and feeble; pains had ceased for about two hours. She was moving her head from side to side, moaning and praying for help. On examination, I found the child's head enormously enlarged (the child was dead), and, as it was not a case for forceps, I at once had recourse to craniotomy. Everything went on favourably for the first four days, when puerperal fever set in, and the patient died on the ninth day. I think, if she had had assistance at an earlier period of her labour, the case might have terminated differently. One curious feature in this case was, that the woman had been labouring under paralysis of the lower extremities for three years.

In contrast to the foregoing cases, I may add the following, showing the advantage of seeing the patient at an early period of labour:—

[illegible] the 2nd May, 1867, I [illegible] a Mussulmanee [illegible] who was in labour. I had just returned from one of our Municipal Committees, and was about to sit down to breakfast, when the note was handed to me. As the horse had not been taken out of the buggy, I was with the patient in a few minutes. She had that morning come in, a distance of fifteen miles, for change of air, having been suffering for some time past from a low form of intermittent fever. She looked pale and weak, and said she had been a good deal fatigued by the journey. She arrived here at about 7 o'clock, and between 8 and 9 was seized with labour pains. This was her third pregnancy, but she was *now* only in, or about, the seventh month. The pains were strong and characteristic of true labour pains. On examination, I detected a transverse presentation, and lost no time in *turning*, converting a shoulder presentation into [illegible] seven months' child. It looked as if it had been dead some hours. The mother, notwithstanding her previous illness, [illegible]

INDIAN EXPERIENCES OF LITHOTRITY.—No. II.

By Surgeon J. B. Scriven,

Principal of the Lahore Medical School.

(Continued from Vol. III., No. 8, page 182.)

Having, in the last number of the *Indian Medical Gazette*, laid before the public a few remarks on Lithotrity in India, it seems to me desirable now to give a brief history of the cases on which the former observations were based. This I do in the present communication, placing them in chronological order.

It will be remembered that, in the last paper, I stated that there had been thirty-six cases in the Medical School Hospital. I now find, on careful examination of the case books, that Kurm, No. 5 upon the list, and Emam Deen, No. 21, were each three times in hospital, and that, in the daily register, the former has been put down three times, and the latter twice, as a fresh case. These two cases, therefore, appear as five, so that the number 36 must be reduced by 3, making the correct number 33.

In the former paper, I have fallen into a slight error in saying that injections, previous to lithotrity, had not been used in *any* of my cases. The detailed account now given shows that, once in each of the three cases, No. 1, No. 2, and No. 17, the bladder was injected. However, as this was only done thrice out of the 137 times that I have executed the manipulation of lithotrity, and two of the occasions were in my first two cases, so long ago as the year 1861, I may, perhaps, be excused for having forgotten it.

I add to the detail of cases a tabular statement, for ready reference, which shows twenty-nine male cases and four female. Of the twenty-nine male cases, nineteen were cured, one of them having undergone the operation of lithotomy. Of the remaining ten, seven left the hospital of their own accord, four of them being relieved, and three no better; one was discharged, relieved; one was lithotomised, and left the hospital suffering from liver disease; and one only died in the hospital. Of the four female cases, in one, No. 20, lithectasy was performed after lithotrity; one, No. 28, left the hospital before I wished her to do so, but in all the cure eventually was complete.

CASE I.

Bhobany, male, aged 40, (Hospital Register No. 1, page 130), a stout, healthy looking man, had had symptoms of stone for one year. This man was operated on with L'Estrange's lithotrite on July 12th, 1861. The urine was held for 2 hours; but, as the bladder was supposed not to be sufficiently full, some tepid water was injected by means of a syringe and catheter. The bladder was also washed out after the operation, and a few small fragments brought away. This man was operated on a second time on July 20th, and a third time on the 27th. On the second occasion chloroform was given.

The quantity of calculous matter that was collected in this case was 232 grains, which was found to consist mainly of urate of ammonia. This man was discharged on the 29th of July, apparently quite well.

CASE II.

Monawar Shah, male, aged 50, (Hospital Register No. 1, page 130). Symptoms of stone for three years. Much emaciated. Urine albuminous.

Bladder injected, and stone crushed on July 20th, 1861. This man's bladder became very irritable after the operation. A few grains only of calculous matter came away, which was found to consist mainly of urate of ammonia. He was discharged, at his own request, on the 26th July.

CASE III.

Jeewan, aged 21, male, (Hospital Register No. 1, page 270). Symptoms of stone for [illegible] years.

Crushed with L'Estrange's instrument on January 14th, 1862. Bladder washed out with tepid water morning and evening. He was again operated on on February 1st. On the 7th February the symptoms of stone had disappeared, and no stone could be detected on sounding. Discharged cured. This man passed altogether about 270 grains of calculous matter, the nature of which is not noted, but from the readiness with which the stone was crushed, and brought away, it was doubtless phosphatic.

CASE IV.

Bala, aged 36, male, (Hospital Register No. 1, page 282). Symptoms of stone for one year. Was first operated on with L'Estrange's lithotrite on February 6th, 1862, and again on the 15th. The bladder was washed out twice a day with tepid water. Altogether this man passed 122 grains of calculous matter, which consisted principally of phosphate of lime. He was carefully sounded after this, and no calculous detected. He was discharged cured on February 19th.

CASE V.

Kootba, aged 30, a stout, healthy male, (Hospital Register No. 1, page 292). Symptoms of stone of 18 months' standing; operated on first on March 16th, 1862. He continued to pass calculous matter up to the 29th, and remained in hospital till April 5th. He had now passed altogether 52 grains of detritus, and the symptoms of stone had quite disappeared, at least so he said; and he was returned "cured" in my annual report; but, as he went away without leave, I had not the opportunity of satisfying myself on this point. On the 29th of June, 1863, he presented himself again, saying that he had been greatly relieved by the former treatment; that for a whole year, in fact, he had enjoyed tolerable health, though the symptoms of stone were not altogether absent. During three months previous to his second admission, he had suffered from very frequent and painful micturition. There appeared to be more than one calculus.

Lithotrity was performed on July 2nd, 8th, 21st, 29th, and on the 13th August. On the 31st of August he again got tired of the treatment and absconded. This time he passed 162 grains of stone. A third time he appeared at the hospital on October 5th, but would not stop. Some remaining fragments were therefore crushed, and he went away. On the 14th of October he came again as an out-patient, and submitted to another crushing. On the 22nd he was sounded, and no stone felt. He said that he had now no pain in making water, though a straining effort was necessary for it. He had kept the detritus that had come away since October 5th, which was found to weigh 30 grains. On the 3rd December of the same year, 1863, this man was again admitted as an in-patient, suffering severely from frequent and painful micturition. He had intermittent fever also; the urine was opaque, alkaline, and albuminous. Lithotrity was performed on the 9th of December, under chloroform, and the bladder was washed out twice a day with tepid water. From the 9th to the 15th he continued to pass calculous matter, in all 35 grains. The urine became clearer, and on the 16th I find the following note:—"Lithotrite passed to-day under chloroform, but no stone felt. Has now no pain or inconvenience in micturition. Makes water about three times a day."

After this he began to suffer from orchitis; this kept him in hospital till the 12th of January, 1864, on which day he was discharged, well.

CASE VI.

Jawaye, female, aged 20, (Hospital Register No. 1, page 404). Symptoms of stone of somewhat less than one year's [illegible]

This woman was first operated on on the [illegible]

CASE VII

CASE VIII

CASE IX.

CASE X

CASE XI

CASE XII

CASE XIII

CASE XIV

CASE XV

CASE XVI

1¼ inch in diameter, as ascertained by the lithotrite. The operation was repeated on the 29th. He went away on the 13th of August, saying that he had lost all symptoms, though a small fragment could still be felt in the bladder. He passed altogether about 80 grains of calculus.

CASE XVII.

Seebdeen, age 120, male, (Hospital Register No. 3, page 245). Symptoms of stone for seven years. Urine contained crystals of triple phosphate and pus. Lithotrity first performed on the 14th of December, 1864. Stone found to be about an inch in diameter. The lithotrite bent in crushing it, and was removed with difficulty, bringing with it a small fragment of stone. The operation was repeated on the 21st and 30th, the second time after injecting. After this the man's bladder became very irritable, and further treatment was interrupted by his getting an attack of dysentery. Not having patience to wait till he recovered from this, he left the hospital on January 4th, 1865. He passed altogether 38 grains of stone. This was a case in which I make no doubt, I should have succeeded, had I had Sir H. Thompson's instruments. The bladder was an irritable one, and required to be very carefully operated on; whereas several unfortunate accidents occurred. In the first operation the instrument bent, entangling an angular fragment of stone, and, as this could not be disengaged, it was dragged along the whole course of the urethra, between the distorted blades of the lithotrite; and, in two of the three operations, I find it recorded that a small piece of the mucous membrane of the bladder was brought away with the instrument.

CASE XVIII.

Wazeera, aged 60, male, (Hospital Register No. 3, page 252). Symptoms of stone for two years. Urine acid. No crystalline deposit. Stone first crushed on the 31st December, 1864. On the 3rd January, 1865, I find it noted that the urine, examined again, was found to contain crystals of uric acid. The operation was repeated on January 9th, 14th, and 23rd, and on February 3rd and 10th. He continued to pass calculous matter up to the 24th. He was kept in hospital a month longer, in consequence of some remaining irritability of the bladder, during which time he was carefully examined both with the sound and lithotrite, but no remaining fragment of stone could be detected. He was discharged, cured, on March 29th, having passed altogether 74 grains of calculous matter.

The following four cases occurred during my absence in England, and were operated on by Drs. Brown and Henderson.

CASE XIX.

Sumeer.—This is the same man (case 17) that was under my treatment in April, May, and June, 1864. He was re-admitted on September 29th, 1865, operated on on the 20th of October, and discharged on the 15th November. He is put down in the monthly register as "Relieved."

This man's re-admission on September 29th, 1865, be it observed, was fifteen months after his discharge on July 1st, 1864. It seems fair to put him down as a fresh case; for, if I had [illegible] any fragment of stone in 1864, it is most probable that symptoms would have been continuous, and that he would have applied earlier. Now we know that he had a marked lithic diathesis; on his first admission he informed us that he had been accustomed to pass sand and gravel for fifteen or twenty years, and on his discharge in July, 1864, he was carefully examined and no stone found. I think, therefore, there [illegible] from a second calculus, and not from any remnant of the former one. I had not the opportunity of inquiring into this point myself, as I was [illegible] at the time, and I do not find any [illegible] in the [illegible].

CASE XX.

Emam Bushee, a female child, age 5, (Hospital Register No. 6, page 51). This case is put down as one of lithotrity; but the stone seems to have been crushed only once on November 1st, 1865, in order to diminish its size, and was afterwards removed by lithotomy. The case did well, and was discharged on the 18th November.

CASE XXI.

Emam Deen, aged 30, male, (Hospital Register No. 9, page 58). Stone first crushed on the 16th of March, 1866, and again on the 28th. This man was discharged on April 30th, re-admitted on the 30th of May, and discharged on the 3rd of June; of this second admission I find no record in the case-book; but a third time he became an in-patient on the 19th of November of the same year, 1866. On this occasion he was lithotritised on the 20th and 24th. On the 27th no stone could be felt, and he was discharged, cured. The quantity of detritus is not noted.

CASE XXII.

Kanoo, a male, aged 10, (Hospital Register No. 7, page 136). Symptoms of renal calculus of 2 years; of stone in the bladder only a short time (not recorded exactly) before admission; stone crushed first on November 24th, 1866, and again on the 27th, 30th, and on the 4th of December. On each occasion, except the last, chloroform was administered. The patient was discharged, cured, on December 11th. One hundred and eighteen grains of stone were collected.

This brings us to 1867, in January of which year I returned from England with Sir H. Thompson's instruments, with which I operated on five cases during the year 1867.

CASE XXIII.

Nanoo, aged 10, male, (Hospital Register No. 4, page [illegible]). Symptoms [illegible] months. Was first operated on on the 13th of February, 1867, and six times afterwards, at intervals of from four to six days. On 17th March he left the hospital of his own accord, much relieved, but with some small fragments [illegible] the bladder. He had passed 70 grains of calculous matter.

He returned on August 1st, and was operated on four times, at intervals of from four to seven days, and went away a second time, of his own accord, on the 24th, having passed 39 grains of detritus, and saying he was well. Not being quite satisfied [illegible] I went to his village; I did not find the man himself, but his friends reported him well.

The sequel of the case, however, is remarkable.

Some time after this, I met Hira, and asking [illegible] was, he replied, that he was [illegible] and that he had not been so since he left, and that he believed there was a fragment of stone remaining. I told him to come again, but he did not obey the summons till the month of May, this year, 1868. The disease had now become unbearable, the pain in making water excessive, and its frequency so great, that he described it as continual dribbling. In this condition he presented himself to me on May 10th, 1868.

[illegible] it was very [illegible] it as 70; and, on more close inquiry, he told us he believed it was 75, which was about what his appearance indicated. Moreover, the man himself was averse to being cut, and both he and I remembered how tolerant he had been of the lithotrite when [illegible]. After [illegible] irritability of the bladder somewhat diminished, so that he could retain his urine for 55 minutes; and the quantity passed after that time was nine fluid drachms and a half. On May 13th [illegible] order that a little more might be secreted, without any urgent [illegible]

the 18th, 22nd, 25th, and 29th.

On the 5th of June his symptoms had very much subsided. He [illegible] without pain or difficulty. He was sounded and no stone felt. He [illegible] he was, this by [illegible] came again on the 19th of June, and I detected a small frag- [illegible]. He showed himself on the 25th. He said that he had passed a good deal of sand, and that, since the last crushing, he had [illegible] penis, though he still felt a little smarting, after micturition, about the neck of the bladder. He said that he made water about 8 times in 24 hours. I sounded him, and found nothing.

This man, while in hospital, experienced great relief from washing out of the bladder, as the passage of the fragments irritated him a good deal. This was a most interesting case to me, for it taught me the possibility of lithotritising when the irritability of the bladder was extreme; and I also learn that it was not impossible when the bladder was empty; for on [illegible] I caught a piece of stone; I waited till the straining effort was over, then crushed and withdrew the instrument without any [illegible]. I have to be at the [illegible] he made here in 1867, at he had suffered patience. However, I shall, doubtless see him again, as he has now learnt the folly of keeping so long out of my sight.

CASE XXV.

[illegible], male, aged [illegible] Hospital Register No. 4, page 419), was cut for stone ten years previously. Symptoms of the present illness, first renal, afterwards vesical, dated from the [illegible] March, 1867. Stone [illegible]. Was first operated on on June 6th, 1867, and three times afterwards at intervals of four days. Altogether passed 52 grains of calculous matter, and was discharged, cured, on the 25th of June, having lost all the symptoms, and no stone being found on careful examina- [illegible].

CASE XXV.

[illegible], male, aged [illegible] Hospital Register No. 6, page 329). Stone phosphatic. Symptoms of one year's stand- [illegible] August, 1867, was eight times afterwards, at intervals of from three to six days. He was discharged, cured, on the 3rd of October, still suffering from a little irritability of bladder, but no stone could be [illegible]. [illegible] from the [illegible] was [illegible].

CASE XXVI.

Bucktawar, male, aged 40. (Hospital Register No. 6, page [illegible]). He was operated on first on September 15th, 1867, and again on [illegible]. [illegible] and he was [illegible] cured, on the 24th.

CASE XXVII.

[illegible], male, aged [illegible] Hospital Register No. 10, page [illegible]). He [illegible] the Madras [illegible] Native Soldiers. [illegible] [illegible] [illegible] [illegible] November 13th, 1867, and [illegible] the [illegible]. He was [illegible], cured, on December 24th. Only [illegible] calculous matter were collected.

CASE XXVIII.

[illegible], [illegible] No. 6, page 330). A very [illegible] for eight months. Had prolapse of the uterus in consequence. The bladder was sounded, and the prolapse reduced under chloroform, as she would not allow anything to be done without it. The stone was readily felt. She was kept in bed for a couple of days, and the uterus did not come down again. On the 9th of January, 1868, chloroform was administered, and the stone crushed with the flat-bladed lithotrite. It was ¾ inch in diameter. Some sand was withdrawn between the blades of the instrument, and she passed a little with the urine, altogether [illegible] grains. On the [illegible] January I find the following note:—

"She has passed three large pieces of stone. Each of them is rounded on one side, and either flattened or angular on the other. The edges of all three are somewhat water-worn. On putting the three pieces together, they evidently form nearly the whole of the calculus, which is oval in shape, 1 inch in its longest diameter, ¾ inch in the next, and ½ in the smallest; there is a slight deficiency in the middle, which is nearly accounted for by the fragments passed before." The three pieces weighed 92 grains. Having passed the calculus, this woman was determined to go at once, without any further examination. Her son, however, a grown-up man, who had attended on her in the hospital, called on the 18th, on which day I find the following note:—

"Her son reports her free from all pain and irritation, and perfectly well. She is able to walk about, and has no prolapse of the uterus. The urine is said to be clear and free from sand, and she makes water two or three times a day only."

CASE XXIX.

[illegible], male, aged [illegible] Hospital Register No. [illegible]). Stone phosphatic, 2½ inches in long diameter (*see* former paper). Operated on with the flat-bladed lithotrite on January [illegible] were [illegible] [illegible]. He was [illegible] cured, on March 4th.

CASE XXX.

Natha, male, aged 35. (Hospital Register No. 11, page 17). Stone uric acid, 2 inches in long diameter. It was first crushed with the fenestrated lithotrite on March 1st, 1868, and 16 times afterwards with the flat-bladed one, as related in my last paper. He was discharged, cured, on May 31st. This man came again to the hospital on June 27th, and reported himself quite well. Altogether he passed 295 grains of calculous [illegible].

CASE XXXI.

[illegible], aged [illegible] male. Hospital Register No. 11, page 34). Symptoms of stone for three years. Had nephralgic pains previous to this. Frequency of micturition great, but he could, by an effort, hold the urine for two hours. Urine acid, and deposited crystals of uric acid. Stone was first crushed on the [illegible] March, 1868, was [illegible] [illegible] The first diameter in which it was caught was 1⅝ inch: it was then released from the grasp of the instrument and caught in a slightly smaller diameter, 1¼ inch, and crushed. He was somewhat relieved after the first operation, and the crushing was repeated, with the flat-bladed lithotrite, on the 9th and 18th. The patient suffered a good deal after the 2nd and 3rd operations: he became weak and low-spirited, his bladder was excessively irritable, his bowels costive, and he could not sleep, so that we proposed to *extract* the stone on the 23rd March.

As I knew the stone to be rather large, and that now it consisted of several fragments that would be difficult to seize, I [illegible] to adopt Sir W. [illegible]'s method of operating, by means of a semi-circular incision for the external parts, [illegible] the prostate, being the same as in the

ordinary lateral method. (See *Lancet*, January 4th, 1868, page 1).

This certainly facilitated the operation, by enabling me to reach the fundus of the bladder more easily with the forefinger of the left hand. There was some free bleeding after the operation, but it was not more difficult to stop, by means of a well-padded tube in the wound, than in the ordinary lateral incision. This man, for some days, appeared to do well, the urine flowed freely through the wound, which became red, granular, and healthy; he began again, however, to be troubled by costiveness, the bowels were opened with the greatest difficulty by strong purgatives and enemata, and the fæces were white and scybalous; there appeared to be no secretion of bile, yet he did not become jaundiced. The urine continued to flow through the wound, which never lost its red, granular aspect, but the patient became weak and emaciated, in which state, of course, repair could not proceed. On the 7th of April he left the hospital, at his own request, which I did not oppose, as medicine did not seem to benefit him, and there was some hope from change of air. I have had no tidings of him since. This man passed about 21 grains of calculous matter before he was lithotomised, and, when the stone was removed, it was found to weigh 599 grains. In all, therefore, it was about 620 grains.

CASE XXXII.

Milava, aged 35, male, (Hospital Register No. XI, page 86). Stone uric acid, diameter two inches. It was crushed first, with the fenestrated instrument, on March 31st, 1868, and fourteen times afterwards, nine of the operations, only, being with the flat-bladed instrument (*see* the former paper). This man was discharged, cured, on June 6th. Altogether 387 grains of calculous matter were collected.

CASE XXXIII.

Nathoo, aged 45, male, (Hospital Register No. 13, page 8). Symptoms of stone of ten months' standing. Urine acid, depositing crystals of uric acid; could hold his water three hours, at the end of which time the quantity passed was about $2\frac{1}{2}$ ounces.

Lithotrity was first performed, with the fenestrated instrument, on the 28th of April, 1868. The stone was found to be $1\frac{1}{4}$ inch in diameter. The operation was repeated with the flat-bladed lithotrite on the 2nd and 5th of May. He was kept in hospital till the 12th, and was three times carefully examined, but no more stone could be found. All his symptoms had subsided, except slight scalding, and frequency of micturition. He could run without any inconvenience. He passed altogether 83 grains of calculous matter.

Tabular Statement of the foregoing Cases.

No.	Name.	Age.	Sex.	Size of Stone.	Date of first operation.	Number of operations.	Duration of treatment.	Composition of Stone.	Result.	Remarks.	Quantity of detritus.
				Inches.							
1	Bhelany	40	Male	..	July 12th, 1861	3	17 days.	U.	Cured	... ...	232 Grs.
2	Meerwar Shah	50	,,	... ...	July 29th, 1861	1	6 ,,	U.	No better ...	Left of his own accord ..	
3	Dhonad ...	21	,,	...	Jan. 14th, 1862	2	24 ,,	... ...	Cured	... ...	270 ,,
4	Bhia ...	26	,,	.. ..	Feb. 6th, 1862	2	15 ,,	P.	Ditto	... ...	122 ,,
5	Kootba ...	30	,,	.. ..	Mar. 16th, 1862	9	113 ,,	... ...	Ditto	3 times in hospital	279 ,,
6	Jhanda ...	2	Female	... ..	June 23rd, 1862	6	19 ,,	U.	Ditto	... ...	349 ,,
7	Ameera ...	44	Male	... ..	July 2nd, 1862	1	10 ,,	... ...	No better ...	Left of his own accord ...	28 ,,
8	Sookha ...	14	,,	... ..	Aug. 1st, 1862	3	52 ,,	U.	Cured	... ...	83 ,,
9	Chunnee Lean	40	,,	... ..	Aug. 28th, 1862	2	38 ,,	P.	Died	Died of diarrhœa	80 ,,
10	Kooba ...	60	,,	... ..	Sept. 24th, 1862	2	16 ,,	...	Relieved ...	Left of his own accord ...	100 ,,
11	Jeen Deen ...	50	,,	... ..	Dec. 12th, 1862	5	56 ,,	...	Cured	... ...	186 ,,
12	Beeram Sing ...	22	,,	... ..	May 1st, 1863	1	7 ,,	P.	Relieved ...	Left of his own accord ...	129 ,,
13	Meera Bukish ...	50	,,	.. ..	May 14th, 1863	1	4 ,,	...	Ditto ...	Ditto	
14	Elahee Buksh ...	50	,,	2	July 23rd, 1863	2	40 ,,	...	Cured	Lithotomised on Aug. 5th	102 ,,
15	Sewdyar	28	,,	... ...	April 2nd, 1864	7	99 ,,	...	Ditto	... ...	294 ,,
16	Mirza	60	,,	$1\frac{1}{2}$	July 17th, 1864	2	27 ,,	U.	Relieved ...	Left of his own accord ...	80 ,,
17	Sookhan ...	60	,,	1	Dec. 14th, 1864	3	21 ,,	P.	No better ...	Ditto	38 ,,
18	Wuzeera	60	,,	... ..	Dec. 31st, 1864	6	89 ,,	U.	Cured	... ...	74 ,,
19	Sazawar ...	54	,,	.. ..	Oct. 24th, 1865	1	26 ,,	...	Relieved ...	Lithectasy ...	
20	Emam Beebee ...	5	Female	.. ..	Nov. 1st, 1865	1	17 ,,	..	Cured	Those four cases were operated on when I was in hospital } 3 times in hospital	
21	Emam Deen ...	50	Male	.. ..	Mar. 16th, 1866	4	57 ,,		Ditto	in England. ...	118 ,,
22	Kureem ...	10	Female	.. ..	Nov. 24th, 1866	4	17 ,,		Ditto	3 times in hospital	145 ,,
23	Nazar ...	60	Male	.. ..	Feb. 12th, 1867	17	176 ,,	... ...	Ditto	... ...	52 ,,
24	Emam Deen ...	25	,,	... ..	June 6th, 1867	4	14 ,,	P.	Ditto	... ...	94 ,,
25	Meera Sham ...	90	,,	... ..	Aug. 22nd, 1867	9	42 ,,	P.	Ditto	... ...	10 ,,
26	Bhoolwar ...	50	,,	... ..	Sept. 13th, 1867	2	11 ,,	...	Ditto	... ...	7 ,,
27	Vyse Dost ...	40	,,	.. ..	Nov. 15th, 1867	2	24 ,,	P.	Ditto	... ...	295 ,,
28	Parmeshree ...	3	Female	.. ..	Jan. 9th, 1868	1	6 ,,	...	Ditto	... ...	197 ,,
29	Dagoo	50	Male	$2\frac{1}{2}$	Jan. 14th, 1868	6	57 ,,	P.	Ditto	... ...	
30	Nativa ...	35	,,	2	May 1st, 1868	17	91 ,,	U.	Ditto	... ...	205 ,,
31	Rahman	25	,,	... ...	Mar. 6th, 1868	3	33 ,,	U.	Lithotomised	Weight of stone extracted, 599 grains	21 ,,
32	Milava ...	35	,,	2	Mar. 31st, 1868	15	67 ,,	U.	Cured	... ...	387 ,,
33	Nathoo	45	,,	$1\frac{1}{4}$	April 28th, 1868	3	11 ,,	U.	Ditto	... ...	83 ,,

I now wish to offer a few explanatory remarks on the above details.

The grounds on which it was considered that any patient was "cured," will, for the most part, be found in the statement of each case; and it may fairly be taken as a fact, when the patient, having been believed cured, at the time of discharge, has not since returned. There are but four instances, out of the 52 cases, in which the patients have returned for treatment of the same disorder, *viz.*, Kootba, No 5, Sazawar, No. 19, Emam Deen, No. 21, and Nazar, No. 23. Now Kootba, Emam Deen, and Nazar were each three times in hospital, and left it, on the first and second occasions, with the evidence of cure either absent or unsatisfactory. They were all three eventually cured. In Sazawar's case there is good ground, as stated before, for believing that the cure was complete on the first occasion. As to the duration of treatment, I have reckoned it from the day of the first operation to that of discharge from hospital (in the case of re-admission, of course deducting the time the patient was absent and not under treatment); but in the case of Kootba, who was detained in hospital after the completion of the treatment for stone, on account of orchitis, I have reckoned it from the first operation to the cessation of symptoms. In the cases of Nazar and Kootba, who were both treated for some time as out-patients, this time has been included. In those instances only, in which the case-book history affords distinct evidence of the composition of the stone (either inferred from the recorded condition of the urine, or ascertained by analysis), has it been noted in the table; P. standing for phosphatic, and U. for uric acid or urate. The quantities of detritus collected have been stated, but

With regard to the time the lithotrite has been in the bladder

ments of calculus have been allowed to come away of their own accord with the urine. In some, where they caused unusual irritation, the bladder has been washed out once or twice a day and catheter for this purpose. Since that time I have used Mr. Clover's apparatus (see Braithwaite's Retrospect, Vol. LI, page 242), which is much more efficient and more easy of application. I have not only found this washing out useful for the removal of detritus, but also to diminish the catarrhal inflammation of the bladder, which is so common an accompaniment of stone, fragments by the lithotrite.

A great improvement will be observed in the results since I began to operate with the new instruments in February, 1867. Of the eleven cases that I have had since, all have been completed, and all but one have been cured. The patients have not shown they used to do previously. The fact is, the improved treatment is more appreciated by them. This is in part due, of course, to one operation by another, within four or five days, unless there be any special cause for delay, such as an attack of fever, of diarrhœa, &c., &c. Thus unreasonable protraction of the treatment has been avoided. However, the treatment, if in many

Parmeshree, No. 28, six days; and in Nathoo, No. 33, fourteen.

The little girl Kamon, No. 22, and the woman Parmeshree,

this operation in females, both old and young. As to males, be it remembered that, in the vast majority, the patient is not even for a moment entirely disabled, as by a cutting operation. as the stone becomes smaller, the painlessness of the manipulation, and the absence of the disagreeable effects of chloroform, are benefits that commend themselves very strongly to patients. This, together with the belief, which the people in this neighmortality than lithotomy, and the instinctive dislike to being

I adore, if the mode of treatment by crushing were equally well have very similar feelings even in widely distant parts, their

both in England and in India. Moreover, I agree with Sir H. Thomson that all calculi might be crushed at a sufficient-

tion generally with this idea, the sufferers would apply for treatment whil etheir stones were small: and that thus lithotrity would, eventually, supersede entirely, for adults, the older operation of lithotomy.

INSOLATIO CEREBRI AS A SYMPTOM OF DISEASE.

it has received so much consideration, and in some instances

disease, or draw on their black-boards the distinguishing forms of the microscopic organisms that have slain millions, and

Whether this state of knowledge will ever be reached, or whether we shall ever fully understand the changes that take is still the hope that even as we have unveiled many an ancient hidden from our sight.

studied at all, but snares to vex the mind; and then let the

between sound and unsound doctrines—so specious are the latter: eit credence to the latest idea broached.

gates of Truth, and out of this chaos who shall extricate us? It may be, let us hope it *shall* be, that one of the world's masterminds will arise, and cattering the worthless material, build such an edifice out of our theories and speculations, as will

higher knowledge. All must feel that though much has been

That there lies before us a vast unseen track, which still baffles

after fresh discoveries gives way to regrets over our actual ignorance.

There has for some time been an idea that insolatio, or heat

other zymotic diseases, as specific poison or miasm for the sun. This belief has been especially strong ground: but it has hardly ever been clearly [illegible] and the virus of insolation has probably always been regarded as separate and distinct from all other poisons.

It is not improbable that a more intimate acquaintance with the subject will teach us that some diseases now apparently unconnected, are really identical, and owe their dissimilarities to the fact of the poison working in different constitutions, in various [illegible] perhaps under differing circumstances yet unknown, and thereby acquiring not only varying degrees, but perfectly distinct forms of action. This may be illustrated in many ways, but one simile will suffice. Oxalic acid in a concentrated form is a powerful irritant poison, but largely diluted, it is an equally powerful sedative—diametrically opposite effects produced solely by the presence or absence of a certain quantity of water.

I have not the intention, nor indeed the power, of advancing any new arguments in favour of the zymotic theory. In this paper that doctrine will be accepted as a truth, although it has not received the incontestable proof that is so desirable in all [illegible], and I wish it to be understood that I use the word *zymotic* without any reference to its derivation, simply to express some sort of change taking place after the introduction into the body of external causes competent to excite such morbid alterations. In like manner, the words *materies*, [illegible], are used to denote these exciting causes; and to convey the impression that they are actual, tangible substances, but they are not intended to carry any further signification. When writing upon subjects that are unfamiliar, I [illegible] arbitrarily upon words which will convey the ideas required, although the elucidation of those ideas may be impossible, and the words expressing them very [illegible]. These [illegible] cloaking ignorance much in vogue.

[illegible] and [illegible] are [illegible] proved by many who have written upon the subject. In the following pages it will be my endeavour to establish not merely the relation, but the absolute identity of the two diseases; and in order to do this, it will be necessary for me to give in the first place those remarks upon ardent fever which my observations in India have suggested to me.

The common continued fever of the hot season is epidemic in this country during the summer months, in the widest sense of [illegible] above, there would be ample grounds for attributing the disease solely to the effects of increased temperature or solar excitation. But, besides being general in its attack, it also exhibits remarkable endemic characters, which render its ravages in one locality far greater than in another that may be quite adjacent, and under precisely [illegible] sion that heat is only one of the causes which co-operate to produce it.

It appears to me that the great heat is the generator of the specific germs which, conveyed into the economy, are capable of exciting ephemeral or ardent fever in constitutions predisposed to yield to the effects of the poison. What condition is necessarily present to co-operate with the sun's heat, or be [illegible] it be organic, electric, or atmospheric in its nature, or from what element or elements the poison is evolved, I cannot con[illegible] others.

When this *materies* is formed, it will produce symptoms of greater or less severity, in proportion to its quantity and the [illegible]

[illegible]

vigour, but especially intemperance and impure atmosphere; because, as will presently be shown, these two influences act in precisely the same manner as the fever poison does, and produce in a lesser degree the same results. It does not seem necessary "that there should be present that kind of predisposition peculiar to the robust European lately arrived in a warm climate," though, no doubt, such men contract the fever in its most asthenic form; nor does it appear that "this form of fever is almost confined to the hot dry months of the year in arid localities, and to regiments or recruits recently arrived from Europe;"* as during the months of May and June, 1865, I witnessed at Dum-Dum an outbreak of [illegible] ment which had been eight years in India. In six weeks 303 men, out of a total strength of 680, were admitted into hospital with continued fever. Some of the cases were very mild (febricula), whilst others were of the greatest severity, and needed active antiphlogistic treatment. Many old soldiers were [illegible]—men who certainly could not be classed as "raw Europeans lately arrived;" and the difference between the dry and wet bulb thermometer rarely exceeded, and was often less than three degrees. A regiment stationed at Calcutta, seven miles distant, maintained excellent health, whilst we were prostrated with sickness. A similar epidemic occurred to another [illegible] at Dum-Dum the summer before, and sent 301 into hospital; but this corps had not been so long in the country, [illegible] been weakened by service in Burmah.

It therefore appears to me evident that there are other reasons for the causation of the fever in addition to elevated temperature; and while every allowance is made for personal or local [illegible] in constitutions predisposed to succumb to its effects.

Sun fever varies greatly in its severity. In its mildest form it is a very trifling ailment, and between febricula and the severest ardent fever, there is every possible gradation. Ardent fever is often accompanied with cerebral complications of the gravest nature; and the post-mortem examinations in the fatal cases frequently show great congestion of the cerebral sinuses, the vessels of the arachnoid, and the spinal veins.

In most cases there is a tendency to congestion of the lungs, [illegible] few hours by this complication. The patient in question was convalescing from a not very severe form of ardent fever; on the fifth day he was suddenly seized with hæmoptysis and difficulty of breathing, and died asphyxiated in four hours from the commencement of these symptoms. His lungs were found engorged with dark-coloured blood, which had transuded into the air vesicles.

I have seen delirium, in cases in which the head was affected, subside into coma, without oppression of the brain; and, on the other hand, men recovering from insolatio exhibiting all the [illegible] unfrequently happens that fever patients are suddenly struck [illegible] tected after death, but, as a rule, the membranes of the brain are congested.

The similarity of the action of immoderate doses of alcohol [illegible] fever has been referred to, and must now be carefully examined, as in this similarity lies, I believe, a key to the subject under discussion.

All carbonaceous compounds capable of assimilation are essentially stimulant in their primary action: they increase combustion and, consequently, animal heat, quicken all the functions, and enhance the bodily vigour. But while carbon, in moderation, produces an agreeable stimulation by supplying fuel [illegible]

* [illegible]

produces a higher amount of stimulation, flushed face, burning headache, foul tongue, anorexia, and general debility. But a very large quantity of pure spirit suddenly swallowed often produces immediate coma with pulselessness and speedy death. These three results are analogous to those produced by the *materies* of common continued fever; viz., *firstly*, febricula or ephemeral fever; *secondly*, ardent fever; *thirdly*, insolatio.

These products, therefore, remain and accumulate in the circulation, and create the effects which we have seen result from alcohol, by their depressing action on the nervous system. This view is borne out both by the symptoms and treatment. The dry heat of the body, and the urine loaded with lithates, evidence increased combustion. While the great benefit derived from copious perspiration shows that obnoxious matters were imprisoned in the blood. In the third case the poison acts suddenly, either on account of its quantity, or the inability of the patient to withstand it.

The effects of an atmosphere overloaded with CO_2 are very similar; they are quickened pulse, some excitement, hot dry skin,—with vertigo and subsequent depression; and when the gas is abundant, insensibility.

Therefore, inebriation and overcrowding, or imperfect ventilation, render men especially liable to attacks of continued fever and insolatio, because they exhaust their capabilities of averting the morbid actions which the poison of these diseases tends to create. The vital force is as complex and as little understood as is the origin of disease. We possess within ourselves powers which combat evil agencies, expel corruptive influences, and renew deteriorated structures. The maintenance of these powers in their full integrity provides the surest immunity from sickness; and their diminution or absence is the only state that can logically be termed predisposition to disease, although it is customary to apply the term to all the various causes that lead to that condition.

I have endeavoured to prove that common continued fever is a zymotic disease, because this question has not yet been settled. Dr. Aitken (after defining the disease) says—"We do not know of any specific poison as the cause of such phenomena as those detailed in the definition, neither have we any evidence that

And Dr. Morehead writes, "between the pathology of ardent and remittent fever, there is believed to be this great difference. In the former there is no *materies* in the blood, as in the latter, time for its elimination."†

Had these high authorities spoken more positively, I should have hesitated before I ventured to give an opposite opinion. statements. But it is essential for the position I have taken, that sun fever should be acknowledged a zymotic disease; because if insolatio and sun fever are but different degrees of the same disorder, and if sun fever is not a zymotic disease, it

My first point, therefore, was to show that the fever is due to zymotic influences, and after having attempted that, to estab-

I now proceed to the second part of my subject;—the con- effects of the poison of sun fever.

morbid anatomy, or pathology be regarded. And this may be due to the different types it has assumed under the hands of the several observers, who have, as a rule, recorded only their experience of single outbreaks; but, I believe, these differences are principally owing to the fact of two diseases being expressed by only one name. I have chosen the term *insolatio* to signify the malady which has so many synonyms, because it is the name now most commonly used; but I must express my conviction that sunstroke, or the condition suddenly induced during exposure to the direct rays of the sun, is a totally distinct affection from that which, occurring under other circumstances, often much resembles it. Sunstroke is seen even in diseases were identical, the causes that could produce the one form, would surely be able occasionally to give rise to the other.

Sunstroke is not nearly so fatal as heat apoplexy. The mortality from insolatio is stated by various authorities to be between 40 and 50 *per cent.* Of 200 cases of sunstroke which occurred to the 25th Bombay Native Infantry while on active service in the field, in the year 1858, *not one proved fatal.* This single fact is sufficient to prove that some great difference exists between the two disorders.

In sunstroke the common explanation may be received that is, that the heat produces a shock "quite similar to that of concussion" (Alison), and syncope is the result of the shock; but that does not tell us a great deal. However, I have not much more to say with regard to sunstroke. Dr. Morehead perceived the difficulty of associating the two diseases. He attributes the one to "a gradual heating of the blood;" but remarks of the other, "It is not, however, only by increasing the heat of the blood, in the manner explained, to a degree incompatible with the maintenance of the functions of the nervous system, that elevated temperature acts as the exciting another explanation, because in these speedily fatal attacks, the sudden violence of the onset, and in the milder attacks, the cold and clammy skin, are inconsistent with the idea of a gradual heating of the blood as the proximate cause;"* and for nearly the same reasons, it is impossible to attribute *sunstroke* to the effect of zymotic influences. But as I hope to show that *insolatio* is dependent upon zymotic causes, I have endeavoured to establish a separation between *coup de soleil* and the other forms of heat asphyxia. The following arguments, therefore, do not refer to sudden fainting supervening while the patient is actually exposed, or has just previously been exposed, to the direct operation of the solar rays.

To this question analogy will furnish many answers in the and, in the face of this, it is manifestly illogical to argue that because insolatio occurs during the hottest time of the year, it is therefore only due to the exalted temperature.

In many diseases, the heat of the body exceeds that of the by Europeans', and maintains this high degree (as in scarlatina, these diseases, the heat of the blood is not increased sufficiently to be "incompatible with the maintenance of the functions of the nervous system." Many of our artisans at home are exposed

for hours together to greater heat than ever emanated from a tropical sun; yet the peculiar symptoms of heat apoplexy never result.

There are no thermometrical observations in insolation to prove that the bodily temperature is any higher than in some other acute diseases; and even if this should be found to be the case, it follows that, inasmuch as the heat exceeds that of the surrounding atmosphere, it must be dependent upon causes operating within the body, and cannot be produced by a gradual heating of the blood by the external temperature which does not maintain an equally high degree. And it is also quite certain that the normal temperature is retained until very shortly before the attack, as a rise of even two degrees is quite enough, unless transient, to render a man incapable of performing any of his ordinary duties.

Some other cause for the disease, then, has to be sought for,—though, for the production of this cause, heat, no doubt, is essential. Under its stimulus, the lower forms of animal and vegetable life multiply, electrical phenomena exhibit their highest activity, and unknown atmospheric changes probably take place; and, I believe, it is from one of these conditions that the disease originates.

(To be continued.)

MISMANAGEMENT.

By A Civil Surgeon.

An important case occurred in this district lately. A corpse was sent to me for examination. I found compound comminuted fracture of the skull, and reported accordingly. Some days after, various clothes and weapons were forwarded for inspection; they were examined, the articles numbered, and returned, with a report. About twenty days afterwards, I was called upon to give my evidence in Court, where I was, of course, asked if I had examined any weapons, &c. I replied that I had, but did not know whether they belonged to this case, as the Police, in their letter, had omitted to inform me with what case they were connected. I was then shewn the articles, which I recognized: but, on being requested to point out on which of them I had discovered blood-stains, I discovered that my numbers had been removed. Natives' clothes being so much alike, I was unable, with satisfaction to myself, to do so, and stated the cause of my inability to the Court; adding, the removing of my numbers was more likely to defeat justice than to catch me tripping in my evidence, as in such a case I should always give my doubt in behalf of the defendant.

Five days after this, these clothes were again sent to me for examination and report.

Now, I wish to ask you, or any Civil Surgeon, if this was not unfair to the defendant? *2ndly*, were the Police, or Court authorities, justified in removing any numbers? Or rather were they not bound to preserve them? And *3rdly*, could I have refused to report again on those clothes, considering the length of time they had been in the hands of the Police and Court officials, after my first report, and again after my examination in Court?

I may add that the way I recognized the clothes in Court was that where I had noticed a suspicious spot on them, I had cut a piece to examine.

Calcutta, *2nd August*, 1868.

Perchloride of Iron, in solution, employed topically, is very efficacious to destroy the virus after the bite of a rabid animal. It is an antidote for various animal poisons.

CASES FROM PRACTICE.

BHURTPORE HOSPITAL REPORTS.—No. I.

By Robert Harvey, M.B., C.M.,
Surgeon to the Bhurtpore Political Agency.

Summary of Capital and Important Operations for the half-year ending June 30th, 1868.

No.	Operations.	Disease.	Recovered.	Died.	Remarks.
5	*Amputations*				
	1 Shoulder-joint	Enchondroma ...	1		
	1 Arm	C. C. F. Gangrene	1		
	1 Fore-arm	Myeloma ...	1		
	1 Thigh	Necrosis ...	1		
	1 Leg	C. C. Fracture ...	...	1	Of exhaustion consequent on secondary hæmorrhage.
1	*Resection*				
	Elbow-joint	Scrofulous ...	1		Partially successful; arm of no great use.
4	*Lithotomies*				
	3 Lateral	Calculus Vesicæ ...	3		Stones weighed 752, 93, and 320 gr., respectively.
	1 do. with division of both lobes of prostate ...	Ditto ditto ...	1		Stone weighed 3,815 grains.
4	*Excisions*				
	1 Tumour of upper jaw	Fibrous ...	1		
	1 Tumour of neck	Fatty ...	1		
	1 ,, of axilla	Glandular ...	1		
	1 ,, of scalp	Cystic ...	1		

CASE I.—COMPOUND COMMINUTED FRACTURE OF LEG; SECONDARY HÆMORRHAGE AFTER AMPUTATION; DEATH.

Mohun Lall, a Brahmin beggar, aged 65, admitted January 24th, 1868, at 7 p.m., having been run over by a heavy cart half an hour before. When seen next morning about 10 o'clock, he was found in the following state:—

The right leg was completely smashed and almost severed about its middle. Three inches of the shaft of the tibia, deeply fissured and much comminuted, protruded from a large and deep wound almost encircling the limb. The fibula was broken in several places, and there had been a good deal of bleeding. Pulse 120, weak and thready, but regular. General health below par. Spirits good. He consented to amputation without demur.

Chloroform having been administered, the leg was amputated at the junction of the upper and middle thirds, by the usual flap operation, by Sub-Assistant Surgeon Bhola Nath Dass. There was little hæmorrhage, and he bore the operation exceedingly well. Three vessels were tied; the flaps (which were ample) brought together with a few sutures, and a cold water bandage applied. His pulse steadied under the chloroform, and he was left, half an hour after the operation, comfortable, free from pain, and with a very fair pulse at 92.

Two hours afterwards the stump began to bleed, so much so that it was found necessary to reopen the wound. This was done in my absence *without* chloroform, and additional ligatures were applied to four small vessels. He bore the handling wonderfully well, and for some days it seemed probable that he would recover. The wound, however, made no attempts to heal, and after the 1st of February became dirty and sloughy. From that day his strength gradually declined, and, in spite of stimulants freely administered, he sank, and died on the 8th, having been in a lethargic stupor for two days before.

Remarks.

Whatever chance of recovery this patient may originally have had, was without doubt taken away by the renewed loss of blood, and the shock consequent on the undoing of the flaps. The cause of the secondary hæmorrhage was, unfortunately, only too apparent. It was due to the ignorance, stupidity, or malice "aforethought found for idle hands to do" of one of the assistants, who re-screwed the tourniquet immediately after it had been removed. This was not discovered until the mouths of the small vessels had become occluded, only to re-open when

CASE II.—LITHOTOMY. CASE OF CALCULUS EXTRACTED WITH CRANIOTOMY FORCEPS. RECOVERY.

K. Shah, aged 20, a Native from Kurrachee, [illegible] Bhooj, Cutch, arrived from Mandavie on the 4th [illegible] in search of relief for stone in the bladder. He had been six years [illegible] and had suffered severely. He was a [illegible] with greyish [illegible] urine, containing [illegible] and [illegible] with [illegible] thrilial debris. His general health had suffered a good deal, [illegible] but there was [illegible] of the kidneys or other organs could be detected. As he refused to [illegible] to the [illegible] and by [illegible] was unable to succeed. A clyster of castor oil was ordered to clear [illegible].

At [illegible] on the 5th the [illegible] with the usual lateral incision, which was made free, as the stone was felt to be a large one, both with the sound and by [illegible] with a pair of medium sized forceps, but on attempting to extract, the instrument immediately slipped. This occurred repeatedly, both with the same pair and with another of the [illegible]. A strong pair was [illegible] the [illegible] [illegible] the [illegible] was then incised, and further attempts made with the same result, the instruments invariably slipping. The internal wound was enlarged a second time, and two of the largest sized forceps applied in turn. The pressure applied to the handles to prevent slipping was so great that one and the other bent under it and was rendered useless. The stone was then fixed at the neck of the bladder, and attempts made to crush it, but no proper instruments being at hand, they failed. It appeared likely that the patient, who had been upwards of fifty minutes under chloroform, would die on the table with the calculus unremoved. The lithotomy *armamentarium* was exhausted, and it seemed that nothing more could be done, when it struck me that a pair of craniotomy forceps might be used for the purpose of lessening the stone. A pair of Lever's pattern, a very powerful but clumsy instrument, with a fixed scissors joint, the only one available, was introduced; but, [illegible] ing the stone, and the first grip was insufficient, the instrument slipping like the others. A second attempt was successful, a firm hold being obtained in the long axis of the stone. All attempts to crush it were, however, fruitless, the united strength of three pairs of hands making no impression on it. Extractive efforts were then used in the direction of the axis of the pelvis, and with a swaying motion as in forceps delivery, and after a degree of force which must have caused much bruising of the [illegible] would, but in the [illegible] issue, might have been termed unwarrantable, the calculus was [illegible] was begun. It was an ovoid oxalate of limestone, 3½ by 7½ inches [illegible].

A [illegible] of time taken than any special tendency to bleeding. The patient was much exhausted, and it was some time before he [illegible] the large dose of chloroform (11 drachms) which had been [illegible]. The [illegible] out with cold water, but no tube was introduced. Two hours after the operation, his pulse was 130, small, thready, and [illegible] the following draught was ordered:—

℞ Ammonię sesqui-carbonatis ... ... gr. ij

[illegible]

[illegible]

A [illegible] interrupted more than once by cough, fever, and diarrhœa. A [illegible]

[illegible] wound was not completely closed till a month later, being kept [illegible] inflammation, or tendency to inflammation, in its track. The sulphur fumigations were continued for a fortnight, but I am not prepared to say that the absence of the expected cellulitis was due to them. He was finally discharged in excellent health on the 18th of May, the wound having [illegible] bed-sore completely healed.

REMARKS.

The moral of this case is not affected by the patient's recovery, which was not to be expected after the rough handling he underwent, and which was mainly due to the excellent nursing and great attention paid him by the subordinates of the hospital. There can, I think, be no doubt that the risk to his life would have been greatly diminished had a proper instrument been available for reducing the bulk of the stone, and that had he died, the fatal result might, in part at least, have been ascribed to its absence. His escape must be regarded as exceptional; and that a similar risk may be avoided in future cases, a large and powerful stone-crusher has been obtained from England, together with a set of lithotrity instruments for small stones. Had the size of the calculus been clearly made out, it would have been matter for consideration whether the high operation, or—as giving a better and freer division of the prostate—the semilunar one, recently described by Professors Fergusson and Erichsen, would not have been preferable to the lateral incision which was adopted; but though a large stone was recognized, the estimate formed of its size fell [illegible] of the reality.

CASE III.—COMPOUND FRACTURE OF ULNA; GANGRENE [illegible] AMPUTATION THROUGH ARM; RECOVERY.

C. Khan, aged 17, a Mussulman [illegible] the 12th [illegible].

On the evening of the 10th he was struck over the right elbow with an iron-bound staff (*lattha*) by a companion with whom he had quarrelled. The blow shattered the ulna just below the olecranon, and made a wound across the back of the fore-arm, which bled profusely, the blood coming in jerks until the arm was tied up. He went to a Hakeem, who removed some loose bone and applied some rude splints, drawing the bandages extremely tightly to check the bleeding. He suffered great agony all night, and lost nearly two pounds of blood, according to the account of his brother. In the morning a Native Doctor went to see him, and undid the bandages, when arterial bleeding immediately re-commenced. He, as a make-shift, tied a bandage so tightly round the upper arm as to serve as a tourniquet, placed the limb upon a splint, and ordered the patient to the hospital. His friends, however, objected to his leaving home, and the tight ligature was allowed to remain till half past ten the next morning, when he was admitted.

On [illegible] was found gangrenous, insensible, black, cold, and covered with bullæ, exhaling the characteristic cadaveric odour. The upper arm was immensely swollen and brawny, and the ligature had formed a deep sulcus in the surrounding swelling. The [illegible] between the bandage and the elbow 10¾, below the elbow not more [illegible] considerably splintered, but no loose bone could be found, and the wound was filled with dark, grumous, fœtid blood. From the extent of the bleeding, and the rapidity and completeness with which gangrene had set in, it seemed probable that a splinter of bone must have wounded a large artery, probably the ulnar, at the time of the injury. The general condition of the patient was wonderfully good. Pulse 84, quiet, and regular. His constitution being robust, and no urgent symptoms calling for immediate action, which would have involved amputation at the shoulder-joint, it was resolved to wait until it should appear whether the gorged and congested tissues between the ligature and the elbow would slough, or recover sufficiently to admit of amputation through them. Soup diet was ordered, with ten minims of sal volatile in [illegible] and [illegible] a grain of [illegible]

time. Cold lead lotion was applied to the arm, carbolic acid sprinkled freely over the fore-arm, to correct fœtor, and sulphur kept burning in sufficient quantity to leave a constant taint of sulphurous acid in the room.

This plan of treatment was continued till the 16th, when, as his health was suffering, and the arm had, to some extent, regained its natural condition, the limb was amputated through the middle of the humerus by flap operation. The parts were enormously congested, and much blood was lost: eleven ligatures being required, as the smallest arterial twigs bled profusely. After recovering from chloroform, he became very restless, and tossed about a good deal with the effect of renewing the bleeding. The wound was re-opened, and three small vessels, scarcely larger than pin points, ligatured. No more blood was lost, and he made an excellent recovery, the wound being now healed. He will leave the hospital in a day or two.

Remarks.

Had this case occurred in England, the plea of malpraxis would probably have been urged by the defendant in mitigation of punishment. It is difficult to say whether it would have been a valid one, as it is possible that the serious nature of the original injury might have rendered amputation necessary, or have been sufficient of itself to cause gangrene. That there was gross malpraxis is sufficiently evident, both on the part of the Hakeem and on that of the Native Doctor. The latter, indeed, excuses himself by saying that the ligature was intended as a purely temporary appliance, till the patient should reach the hospital, but as he allowed it to remain nearly thirty hours, he cannot be held blameless. Indeed, it is possible that but for his ligature, the bad effects of the Hakeem's tight bandaging might have passed away. Had the patient died, the charge might have been extended to me, on the ground that immediate amputation at the shoulder-joint might have saved him; but to this plea the circumstances of the case, and the counter-pressure *bonâ fides*, would have been a sufficient answer. The youth, and good constitution of the patient, and the absence of any urgent symptoms, sufficiently justified a delay, which has ended by saving a useful stump capable of sustaining an artificial limb.

Political Agency, Bhurtpoor, *July 20th*, 1868.

CASE OF ATROPHY OF THE LUNGS IN A NEW-BORN INFANT.

By G. D. McReddie,

Civil Surgeon.

This was observed in a female infant, which had survived its birth about a quarter of an hour. On opening the chest, the right lung was discovered, after some search, lying far back pressed against the ribs; it was removed and examined; respiration had freely taken place in it, but it weighed only 120 grains. The mean weight of *one* lung which has respired for less than an hour is something above 450 grains (918 grains being the figure given for both lungs in the 2nd edition of Guy's Forensic Medicine, p. 83). The left lung was not separated from its attachment to the heart; it measured about three-quarters of an inch in length by half an inch in breadth. The diaphragm on the left side was entirely absent, its site being indicated posteriorly only by a ribbon-like band of muscular fibres. The left lung also had respired.

Hurdwar, Oudh 5th *August*, 1868.

Notices to Correspondents.

Communications have been received from

Inspector General of Hospitals Dr John Murray.
Dr Wilson *Mysore*.
Surgeon Barnard
A Madras Civil Surgeon.
Sub-Assistant Surgeon Hem Chunder Bhuttacharjee.
Our own English Correspondent.
&c., &c., &c.

The Indian Medical Gazette.

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Hare Street, January, 1868. } WYMAN BROS., *Proprietors.*

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I would not do you the unkindness of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the warriors and politicians of the periods in which they lived."—Sir Benjamin Brodie.

THE EPIDEMIC CYANOSIS OF LOWER BENGAL.

A remarkable discovery has lately been published to the world by the Municipality of Calcutta. The statistics appended to the Report for 1867 will afford great delight to certain scientific societies in England. The most astounding facts are there propounded without explanation, comment, or foot-note. Revelations, such as the physician does not usually meet with in a lifetime, are here offered to the profession with a degree of *sang froid* which would certainly be amusing, if it did not, as is actually the case, amount to official absurdity. Is it intended to expand the empire of human knowledge by the triumphs of human imagination—a process which, however successfully it may work in the realms of poetry, is not generally known to aid the fighting on the field of science? The following observations will prove whether we are justified or not in making these remarks. We need scarcely remind our readers that the disease, or more properly the condition, which is defined by the term cyanosis, is one of very considerable rarity; at least we could once on having believed it to be so until now. But the Mortality Returns of the Calcutta Municipality only prove to

[illegible] Cyanosis, or blue disease, is caused by the blending of venous with arterial blood, the result of imperfect development of the [illegible] heart, we have already seen in a few instances. Those of [illegible] we should meet with frequently this year. Yet we may perhaps [illegible] individual [illegible] as to consider [illegible] What do we find in Calcutta?

The following is the statement put forth by the Municipality of Calcutta, —

Deaths from Cyanosis in Calcutta during the year 1867.

In January	..	..	16
„ February	..	..	21
„ March	..	..	26
„ April	..	..	26
„ May	..	..	[illegible]
„ June	..	..	[illegible]
„ July	..	..	67
„ August	..	..	78
„ September	..	..	81
„ October	..	..	[illegible]
„ November	..	..	[illegible]
„ December	..	..	83
Total	..	..	744

[illegible] of [illegible] from [illegible] in 1867, the month of the year having evidently much to [illegible] the [illegible] there being 223 deaths during the [illegible] and during the second similar [illegible] "What [illegible] *England?*"

We are naturally induced to look at English statistics bearing on these facts.

We have before us the 29th Report of the Registrar General for the year 1866. We there find the estimated population of England to be 21,210,020 souls, and the number of deaths from [illegible] cause 704 deaths per annum in Calcutta, where the population is considerably below half a million, so that cyanosis is more than [illegible] in England.

The [illegible] Do they [illegible] occur in the same ratio?

[illegible] we [illegible] there were *no* other malformations recorded, and there was [illegible] Under like circumstances, and during a similar period, in England we have 413 deaths from *spina bifida* and 171 from other malformations; so that there would appear to be no general law accounting for the greater prevalence of cyanosis in India, [illegible] we may expect inaccurate statistics in the Health Reports of the Municipality of Calcutta. Can anything be more absurd than [illegible] "As the information concerning the number of deaths has been derived from reliable sources, I have every reason to [illegible]

[illegible] cyclone upon the [illegible] disastrous. The mortality was very much increased in November, in consequence of the sufferings the poor had to endure, whose houses and property had been destroyed by the hurricane." We naturally ask,—Might not then the celebrated cyclone have [illegible] deaths from cyanosis during November, against [illegible] in February?

It was a bad [illegible] we know it. The [illegible] are in need of [illegible] recommend as [illegible] Calcutta Municipality's death statistics. They are replete with the most startling professional jokes, and with much that is provocative of general mirth. They will surely proceed much in the same way as do the more facetious works of Mark Lemon and Mr. Joseph Miller. The philosopher who first brought to light the epidemic cyanosis of Lower Bengal, could he rise, to work out many other like discoveries? No, there is a uniform standard up to which our Health Officer seems always to exert his fancy, if not his intellect, and accordingly he brings before us in profusion the very germs of thought. Let us still further look into the figures before us.

During 1866, in Calcutta, two murders occurred. There was no public execution; only one man committed suicide by hanging. But we find that eight individuals were hanged by accident! (*Vide* general statement No. 5). In England, in 1866, there were 480 murders, *i.e.*, the crime was amongst the same number of people nearly six times as common in 1866 as it was in Calcutta during 1867. In Calcutta eight persons thrust their heads [illegible] and nooses. In the [illegible] years no such curious phenomenon is returned in the figures of the Registrar-General of England.

Let us look a little more closely at the rest of the figures. It will be sufficient to compare the statistics of 1867 in this city with those of England in 1866, as we have not the exactly corresponding report. Suicide, committed in all the different ways, is, it would appear, five times as common in England as in Calcutta. For one child that dies from teething in Calcutta, [illegible] in England.

Premature births are 17 times more common in England than in Calcutta. Deaths from hepatitis are nearly six times more common *in England than here*, "(when only six fatal cases are reported in the year!"—and this side by side with 272 deaths from [illegible]

Aneurism must be 10 times more common in England. Brain disease 11 times more mortal. Parasitic disease 26 times more fatal. Atrophy and debility 74 times more fatal; incurable [illegible] times more fatal in England than in Calcutta, and all this, be it remembered, amongst equal numbers of individuals.

Only two deaths occurred from stone in Calcutta during 1867, only five from Bright's disease, and not more than two from pleurisy. Lastly (all credit to the penetration and acumen of our Health Officer), "sudden death from unascertained causes" is 20 times less frequent in Calcutta than in London; and similarly the "causes of death not specified or ill-defined" are not so frequent here by ¼th as they are in England.

Well, indeed, may it be said—"Anything can be made out [illegible] We [illegible]

that the above propositions (whatever be their want of worth) are not set down by us at random, but that they are the result of a careful comparison between the Reports of the Health Officer for Calcutta, for 1867, and that of the English Registrar-General for 1866.

We are driven, from the above inquiry, to a few curious conclusions:—

1st. Our Indian Mortuary Returns are much more precise and valuable than those of England.

2nd. There is no difficulty in arriving at the exact causes of death, in all cases, within the limits of the Calcutta Municipality. Beyond such boundaries, the difficulties are allowed to be considerable.

3rd. The frequency of diseases of the pleura, kidney, heart, and brain in Calcutta is merely nominal.

4th. Death from hepatitis is a thing all but unknown.

5th. For one poor work man to be seen in the purlieus of Calcutta, amongst half a million of souls, you have seventy atrophied and debilitated creatures amongst the same number of human beings in England.

6th. Children do not suffer at all from teething in India.

7th. Murder is never heard of in this metropolis.

8th. Suicide is equally rare.

9th. A few men *will* run their heads into hempen nooses, and it then becomes the painful duty of the Health Officer to return all such cases as deaths from *accidental hanging*.

Lastly, it is pleasant to know that the ratio of deaths among Christians to the Christian population in Calcutta, during 1867, being 2,836 per cent., this rate of mortality is lower than has occurred in Italy during the 5 years 1862-66, or in the population of Austria during the 14 years 1853-66. (*Vide* Dr. Farr's figures, p. xxv., Registrar-General's Report, 1866.)

This is a true fact, if the health statistics in the report be also true; and who will be sceptical enough to doubt their perfect accuracy? Echo answers *perfect accuracy!*

Joking aside, this is an unpleasant task we have taken up. Yet it is our duty, as journalists, to correct pernicious error, and to counteract what is likely to deceive. It is honestly with this desire, and with this alone, that we are driven to thrusting a lance through all this miserable mock science now before us. These might indeed, on favorable occasions, excite the laughter of the members of the Statistical and Epidemiological Societies of England, but we have no wish that they should bring ridicule and contempt generally on men of science in India. It shall be our task to prevent this if possible. If it be a fact that cyanosis is unusually prevalent in Calcutta, it is but right that our physicians should see to it. If, on the contrary, as is known, the reverse is the case, it is the duty of the Health Officer to publish such poor jokes at the expense of his public reputation. Physical malformations, the Health Officer would have us believe, are twice as common in spring as in autumn. What shall we be asked to believe next? Probably that old men die of teething, and infants of old age; or something equally serious. We are now expecting a statement from [illegible] who is not restrained by any compunction in publishing, as he has to every body [illegible] the most impossible [illegible] ments, and whose returns generally seem to us to be based on [illegible] and unreal information. We not only mistrust the accuracy of such returns, but we unhesitatingly declare them to be, as [illegible] pure nonsense, as in the case of epidemic cyanosis, accidental hanging, [illegible]. It is full time that all this neglect [illegible] be put a stop to. Two or three years ago we called upon the Health Officer to desist from careless blundering in figures and in facts. Our good advice, it would appear, has been thrown away.

We are inclined to ask,—Is there no Moral Vagrancy Act, the provisions of which can point to an appropriate place of detention for such triflers with science? Is not the deportation of those individuals justifiable whose offences against science can only be measured by time and distance?

When the Health Officer of Calcutta retires from office, it will be allowed by all that, during his reign, he particularly distinguished himself by his readiness to accept, and to publish, unquestioned, as important truths, the statements of ignorant persons; that he aspired to be, and that he deserved the title of, the Baron Munchausen of Indian Statistical Science.

When the Calcutta Municipality see the last of the present Health Officer and appoint his successor—be he who he may—we shall be the first to congratulate them on having found a gentleman with weaker imagination and a greater reverence for accuracy than their present Œdipus;—the oracular *savant* who stood [illegible], the unenviable discoverer of epidemic cyanosis in Lower Bengal.

Some of our readers may possibly feel inclined to accuse us of [illegible] personality in our criticism of public [illegible]. We can only reply that it is very difficult to separate blunders from the author of those blunders,—as it would be for a Judge or jury to consider the merits of a charge of murder apart from all consideration of the individual charged with the crime. It may be well, however, for us to state that we regard the Calcutta Municipality as open to grave censure for allowing such figures to be published as those of which we have above exposed the culpable inaccuracy. The lamentable display of ignorance and error presented by the Calcutta Health Officer's Report for 1867, has, in a manner, come before the public, stamped with the *imprimatur* of the whole Calcutta Municipality. It is to be regretted that a large and influential body of intelligent men should allow to pass, unsifted and uncorrected, reports the accuracy of which they must at least be interested in. We hope our civic [illegible] may not think it unworthy [illegible] consideration how long they should allow their Health Officer to continue to fritter away his time in the production of what must inevitably bring discredit upon the Municipality of Calcutta.

VERNACULAR MEDICAL EDUCATION.

The question of medical education among the [illegible] India is a subject of daily increasing interest and importance

We have now not only the large [illegible] capitals of the several presidencies, and important schools at Agra and Lahore, which may now be considered [illegible] established and time-honoured institutions, but in all directions the [illegible] Governments are [illegible] [illegible] [illegible]

[illegible] the [illegible] of Dr. [illegible]. We are [illegible] that the Nagpore school has [illegible] year, and that its [illegible] are [illegible]. We heartily [illegible] Native [illegible] [illegible] if well [illegible] [illegible] [illegible]

have come out to *test* the *El Dorado* fame of India? Or, are there not others less able, whose lot has hitherto been unlucky in the gyrations of fortune's wheel, and who would be content with almost anything they could get? We believe that there is a fair sprinkling of each of these classes. But, in the first place, the best of those, who are willing to take Government service, are not always free to do so at once: and, in the second, it is not well that the Government of such a vast empire should be dependent upon mere adventurers in her hour of need. The quality of the material cannot always be detected. Who shall guarantee that, promiscuously entertained as such men are, and bound by no covenant, they may not, *if they find the place does not suit them*, simply abscond, and leave the sick who have been entrusted to their care to a kinder, and it may be a safer, guardian, the *vis medicatrix naturæ*? It is too much the custom to depend upon such men, too, for the smaller civil stations; but it is a serious mistake. An instance has recently been brought to our notice, strongly illustrative of this. During the progress of negotiations between the Medical Department and one of the local Governments, with reference to the appointment of one of these gentlemen to a civil station,—nay, just as it was finally arranged that he was to go and assume charge, (his services there were urgently required,) the individual in question heard of some other appointment which he preferred, and, without any compunction, threw the Government over, and accepted it. Nor can we blame him.

We venture to urge two ways of dealing with this perplexing difficulty. Adopt, in the first place, increasing the regular establishments, (a) *Second* those Medical Officers who have elected for other than the medical walks of life, and in which they look for prizes; and bring upon the Medical Establishment, in their place, men who shall perform the professional work which they were originally intended to perform, and who, in the event of the *Seconded* ever returning to the ranks of the profession, would become supernumeraries, and so remain, until they were absorbed, by vacancies, into the general service. Or, b), let Government enter into a contract with a certain number of well-qualified medical men in England, and induce them to come to India upon the same terms as a large number of engineers have recently taken Government service. There is but little doubt that the majority of such, *once here*, would remain. The pay is good, and the "Uncovenanted Family Pension Fund" offers a reasonable provision for widows and orphans. But the adoption of such a measure would be to aim a heavy blow at the old service. We incline rather to protect it—"Woodman spare that tree." We would rather add to its growth, and infuse new life into its constitution. It is our only chance of maintaining our Broughtons, our Hamiltons, our Sprengers, our Forsyths, our Cavagnaris, and our Daveys. The primary object of every Christian, who comes to India, should be to benefit those amongst whom he is to live. If his sojourn is to be short, we can never expect him to identify himself with the people. His heart will not be in the work, and he will leave but little trace behind him. Such men we want not. Let them stay where they are. Nor can we wonder. His home is elsewhere.

We firmly believe that, as, with years of experience, it will be found that a local European army must again be maintained: so must the old medical service be preserved on its ancient foundations. A *nomadic race* of Doctors, perpetuated from generation to generation, would, in time, lead as effectually to the estrangement of the people from our rule, as men, who have made India the land of their adoption, now do more to establish our popularity than untold battalions of infantry. We strongly incline, then, for this reason, to the first of our two suggestions. But, in the first place, we must increase the strength of the *regular establishment*.

"NATIVE MIDWIFERY."

We beg to draw attention to the cases of difficult labour recorded, in our present issue, by the Civil Surgeon of Ajmere. The subject is one of vital importance to the Native community, and it has at length attracted the attention of the authorities. Sub-Assistant Surgeons have, for some time past, been instructed in midwifery; and one of these, a proficient in the art, is now appointed at the Medical College, in Calcutta, to teach the *Native Doctor* class; so that there is a prospect of the blessings of good midwifery, as well as of good medicine and surgery, being, in course of time, conveyed to the masses. But this, in itself, will do nothing towards the safe delivery of poor Native women in their own homes in remote villages, miles and miles away from dispensaries and Sub-Assistant Surgeons and Native Doctors. Though, indeed, when Native Doctors generally are educated with a view to their establishing themselves in practice, as some of those of the Bengalee class in the Medical College have done, then this desirable result may come to pass. According to their popularity, so will they be "called in" and consulted by the *Native Daces*. But we must advance a step further, and *educate the Native Daces themselves*. A few of these future *Mesdames la Chapelles* are being taught by the Civil Surgeon at Umballah, who has set an admirable example in this respect. He has *a class* of *Daces* whom he instructs in practical midwifery; and we see no reason why, with reference to the habits of seclusion prevalent in Native society, this should not be done systematically throughout India at our colleges and schools. It is a fact well known to all experienced medical men, that parturition in this country is far from being the simple process that it is thought, by the uninitiated, to be. We trust that others will follow Dr. Murray's example, and record the results of their experience, in this respect, in these pages. We doubt not that a mass of evidence will be collected, which, whilst it may surprise those who perhaps have not thought much on the subject, will prove the necessity of systematic and enlarged endeavour to remedy the evil.

Review.

[illegible] By Dr. [illegible]

facts in the history of disease, is due to the circumstance that

Extracts.

professional brother seems to excite the liveliest sentiments of

Dr. Smith's report on the Lahore Lunatic Asylum for

demic fever raged in nearly every Jail in the Punjab, and did not spare the Asylum, was still very high, being about 20 per

Medical Correspondence.

ly found that it dilates the pupil with all the energy of belladonna. In twenty minutes the increasing dimness of sight in



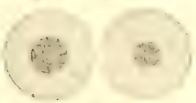
increasing slowly than when produced

trial of the root-juice of bel-

restored to its natural size in four days. But the dilatation pro-

in thirty-six hours this appear-





rays admitted into my naturally

tween the right and left eye in

largely transported to India from London for the use of oculists,

Europe for one of the "armamenta chirurgiæ," when you have

Dr. Cleghorn suggests that you should get this brief tale noticed, or, if you like, published, in the "Indian Annals," in order to draw attention to the facts I have given you. The locality

what grows freely in our gardens will thrive as well, probably

sue such medico-physiological enquiries, I should try if the *Aniseilus* has the same effect as henbane and belladonna in

they are identical in action on the iris; but I hope some of your brethren in the East will settle these points by actual trial.

You know the interest I have always taken in tracing the analogies in action among plants of the same natural family.

Aniseilus, chosen for the genus, let me add that it is from ανισος,

J. Fayrer.

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

(Continued.)

By J. Fayrer, M.D.,

Professor of Surgery, Medical College of Bengal.

September 11th, 1868.—I am indebted to Messrs. Greenhill and Rutherford, Veterinary Surgeons, for the opportunity of making the following experiments. The horses experimented on had been condemned to be destroyed for the disease, partial paraplegia (gone in the loins), and were placed at my disposal by the above gentlemen, for whose valuable aid in noting the symptoms and recording the pathological conditions I am under much obligation. The disease, though incapacitating the animal for work, is not such as to reduce his strength so much as to vitiate the evidence derived from the effects upon him of the poison; and I believe these experiments may be accepted as fair illustrations of the action of snake-poison on the larger animals. The subjects experimented on were a stud-bred mare about 14·3 high and aged 27 years, suffering from partial paraplegia, and an Australian horse, 15·1, 9 years old, a powerful animal, and in good condition, though also paraplegic. The mare succumbed in an hour and twenty minutes from the effects of the bite of a large Cobra; whilst the stronger and younger horse survived the bite of a powerful, fresh, and full-grown Daboia nearly twelve hours.

The difference in the effects of the poison of the Daboia and Cobra in these two cases is very remarkable, not only as to the duration of life in the animals bitten, but also in the pathological conditions before and after death.

The mare bitten by the Cobra was rapidly affected—staggered, became exhausted, and died in less than an hour and a half. The post-mortem examination shewed distinct rigor mortis, firm coagulation of the blood; the heart and large vessels, aorta as well as venæ cavæ, distended by firm ante and post-mortem coagula. The lungs were very slightly congested, frothy when cut into, and on the anterior surface rather pale and bloodless than the reverse—whilst all the abdominal viscera were equally free from congestion. The horse bitten by the Daboia, on the other hand, was affected very slowly, and seemed to doze his life away until just at the last, when a few unconscious plunges terminated his existence; the post-mortem in this case shewed less cadaveric rigidity, fluid blood, empty cardiac cavities, and lungs and other viscera congested.

But it is to be noted that the Cobra bit more vigorously, fixed his fangs deeper, and had to deal with a more feeble animal than the Daboia, who bit a more powerful and healthy horse, and did not insert his teeth with such vigor as the Cobra. The snakes were both fresh and full-grown, and their terrible power was strikingly illustrated by the death of these two animals.

The difference observed in the pathological appearances, and state of the blood after death, may probably be accounted for by the greater rapidity of death in one case, rather than by any essential difference in the nature of the action of the poisons. The mare bitten by the Cobra died in 80 minutes, and after death the blood coagulated firmly, and was found distending the heart and great vessels with firm coagula. Death was probably caused by the rapid effects of the poison on the nerve-centres, before the blood had time to be thoroughly devitalized. In the other case, where death did not occur for nearly 12 hours, there was no coagulation either in or out of the heart or vessels; sufficient time had elapsed to allow the blood to be thoroughly changed. I am inclined to believe that if death were protracted after a Cobra-bite, the condition of the blood would be as it was in the case of the Daboia-bite.

Experiment No. 1.

A bay Australian gelding, 15·1 high, 9 years old, and partially paraplegic, (but otherwise a strong, well-conditioned horse); pulse 42, soft; respiration 48 per minute; was bitten by a full-grown fresh Daboia Russelli near the lower part of the neck, over the track of the right jugular.* The snake struck vigorously, and drew blood freely. The time was 12-15.

12-19.—Respiration 58 (gone up 10); pulse still 42.

12-30.—Respiration 64; pulse now 64. The puncture swollen.

12-52.—Lies down; looks languid; pulse 80 and weak.

1-1.—Twitching of head to the near side; horse still down and very dull. Lower lip pendulous; muzzle resting on the ground; sight and hearing natural.

1-5.—A spasmodic twitch of the muscles of the neck; patches of urticaria, about the size of a shilling, making their appearance on the abdominal surface.

1-9.—Pulse 70, intermittent.

1-16.—Pulse 76; respiration 52. Can rise from the recumbent posture without much effort.

3.—Pulse 80, tremulous and intermittent; horse looks dull and sleepy; yawning, getting up, and lying down again very frequently, as in colic.

4-30.—Pulse 67, weak and intermittent; breathing hurried; horse standing, but very dull; wound swollen, and very painful to the touch; mucous membrane of mouth pallid; ears and legs cold; body moderately warm; when roused is quite sensible.

6.—Horse lying down, breathing heavily; pulse almost imperceptible at the jaw, 60; fugitive colic pains.

9-30.—Breathing stertorous and very heavy; body and extremities cold; pulse imperceptible; horse drank a little water, but is evidently sinking; region of wound much swollen and very painful; purging thin, watery fœces (they were quite natural when the horse was bitten).

11-45.—Down and struggling; getting up and moving to and fro in the loose box restlessly; then lying down again and struggling with all four legs; straining and passing small quantities of watery fœces with flatus.

12.—Dead.

Bitten at 12-15.

Died at 12, midnight—*i.e.*, in eleven hours and three-quarters.

Post-mortem 12 hours after death. Cadaveric rigidity moderate; abdomen distended, and mucous membrane of rectum partially congested and swollen; vicinity of wound blackened by infiltrated blood in the cellular tissue. Muscles all discolored, and general venous congestion apparent.

Thorax.—Heart, right auricle empty; right ventricle contained a little frothy blood; left auricle and ventricle both empty; substance of heart firm, but presents numerous small ecchymosed spots. Larger blood vessels as usual. Blood in them fluid.

Lungs congested.

Liver and spleen congested.

Mucous surface of intestines in a highly irritable state, congested and thickened.

Other viscera healthy.

Experiment No. 2.

A stud-bred mare, about 14·3 high, aged 27, suffering from partial paraplegia and emphysema of lungs, but otherwise strong,

* The vein was not penetrated.

noon 30.

day.

1·20.—Intense restlessness; staggering; tremulous action

1·32.—Lies down.

The horse is evidently dying; convulsive plunging of all four very unusual).

Eaten at 12·22.

Thorax. Lungs, slight hypostatic congestion; surface, natural color.

clots were very firm, and were partially decolorized, probably indicating their ante-mortem origin.

The great venous and arterial trunks, especially the aorta firmly.

The liver and spleen were normal, not in the least congested.

about 18 hours after death; it was dark and perfectly fluid;

On placing a drop of it under the microscope, the field was

remarked just before and after death, that there was a peculiar pallor of the mucous membrane of the mouth.

The relative disproportions between the pulse and respiration is accounted for by a disordered condition of the pulmonary

six inches from the head, by a full-grown, fresh, and vigorous

Experiment No. 2.

A full-grown Cobra was bitten by another full-grown, fresh, and vigorous Cobra in the body, in two places, about six inches

Experiment No. 3.

drawn. There could be no doubt that the fangs had penetrated, or that the poison was inoculated.

2·2 *p.m.* No effect.

Experiment No. 4.

in 100 seconds. The blood coagulated after death.

Experiment No. 5.

A hypodermic syringe filled with about 30 drops of the blood, taken from the above fowl immediately after death, was injected

[illegible] was [illegible] later in the eye to the [illegible] gradually [illegible] [illegible]; could walk if roused, but seemed [illegible]. [illegible] drop of [illegible] [illegible] 1-10 p.m.

EXPERIMENT No. 6.

Mr. [illegible] repeated some of the fowl experiments. No. 5 [illegible] [illegible] [illegible] 26th September.

27th September.—Is [illegible] [illegible] and alive.

28th September.—Fowl [illegible] is alive and [illegible] apparently well, excepting slight lameness in the injected leg.

[illegible] [illegible] [illegible] [

EXPERIMENT No. 16.

EXPERIMENT No. 17

EXPERIMENT No. 18.

The blood coagulated firmly.

EXPERIMENT No. 19

No. 18 were injected into the thigh of a full-grown and strong fowl at 12-25 p.m., 28th September.

12-27.—It seemed much excited; this passed off, and at 1-26 p.m. it seemed very little affected, except that it was purged.

3.—Crouching on the ground; body inclined to one side. One leg partly extended, with wing extended over it.

EXPERIMENT No. 20

EXPERIMENT No. 21

introduced with an ordinary quill pen.

For the first two or three minutes no apparent effect was produced: the bird walked about as usual. It then began to soon crouched itself together; began to droop, to nod its head, and rest its beak on the ground. This state of drowsiness gra- to rouse itself with a start, and falling off again into a profound state of narcotism.

At 12-30 it was almost unconscious, and could not rise on its legs; when roused, opened its eyes, made an attempt to raise the head, which fell over again. Its condition seemed to be in all respects one of profound narcotism.

12-37.—A few convulsive movements only indicate life.

12-40.—Still a few convulsive movements and stretching of the neck.

The wound much discolored and ecchymosed; emphysema of the areolar tissue about it. The blood clotted firmly after death.

drops) was injected into the thigh of another fowl.

30th September, 2 *p.m.*—More than 24 hours and it is

2nd October.—Quite well.

This, imperfect as it is, is the first opportunity I have had of experimenting with the poison of this snake; it is rare, and the snake-catchers have not been able to procure me a fresh and wild specimen. The snake experimented with has been for some time in the hands of the snake-catcher. The man who brought it had borrowed it from a friend, and he was unable to say how long it had been in captivity, or where it had been caught. This Ophiophagus Elaps is the largest kind of poisonous colubrine snake, and a very formidable and terrible creature it is. In general form it resembles the Cobra, having the head and hood similarly shaped. Its fangs are like those of the Cobra, and its venom is said to be equally deadly in proportion to its size. It is very active and aggressive, has great power of turning itself in a short space on its

In color it differs from the Cobra, being of an olive-green and which are very conspicuous on the hood and tail. The hood is proportionately not so large as in the Cobra, and there are other unimportant anatomical differences which I need not detail here. It attains to a great size, 12 feet or even more, and is therefore probably one of, if not the largest poisonous snakes known. There is only one species of the genus which has received its name from its habit of feeding on other snakes.

It is said to be very dangerous and aggressive (Dr. Castor says "it is very fierce, and is always ready not only I know not if truly—that it has chased men for hours when Ophiophagus Elaps (Bengalee name Sankr Chear). Naja

Bungarus. Naja Elaps. Naja Vittata. Hamadryas Ophiophagus. Trimeresurus Ophiophagus. Hamadryas Elaps.

Such are the synonyms given from different authorities by Gunther. The first is the one by which it is generally recognized by naturalists in the present day. It has a wide geographical distribution, and is found in Bengal, though I have not yet ascertained the localities in this province that it most affects. The snake-catchers say it is to be found in the Sonderbunds and other dense and secluded jungle, and that it is difficult and dangerous to capture. It is certainly found in Burmah and the Tenasserim Provinces and Assam. Gunther speaks of three varieties: the one experimented with, found in the Malayan Peninsula, Bengal, Peninsula of Southern India; another in the Phillipine Islands: a third in Borneo.

These are merely varieties, and are distinguished by some difference in color. It has, Gunther says, been found in every part of the Indian Continent—in the Andaman Islands, Java, Sumatra, Borneo, and the Phillipine Islands, and, according to Dumeril, in New Guinea. It inhabits hollow trees, and is sometimes found between their branches.

Its food, as its name implies, consists of other snakes.

Present.—Dr. Fayrer and Mr. Sceva.

Experiment No. 22.

October 2nd, 1868.—The Ophiophagus Elaps, mentioned in experiment No. 21, September 29th, that had been deprived of its fangs, was made to shed its poison by squeezing the poison-glands: a drop or two only could be obtained, so much having been secreted in four days. It had the same appearance as on the first occasion. This, diluted with an equal quantity of water, was injected with the hypodermic syringe into a fowl's thigh at 12-30 a.m. The fowl was not immediately affected, and being carelessly placed near an open door, it made its escape into a drain, in which, as it did not emerge, I presume it died. The opportunity of watching the effects of the poison was lost; but the experiment is interesting, as it shews that the poison is secreted although the poison fangs are removed, and it shews the rate at which it was secreted, about two drops in four days. The snake had not been fed, but on this occasion it was fed with a Passerita Mycterezans, (a green whip-snake) that was poisoned by a Cobra.—*Vide* experiment No. 23. The snake-man put the head of the dead snake into the Ophiophagus' mouth; it seemed delighted to have it, and proceeded to swallow it forthwith, gradually drawing it into its gullet by alternate external movements of the lower maxillary bones. The process of swallowing occupied about five minutes, during which the Ophiophagus moved slowly about with the anterior part of his body raised and his hood distended, the Passerita hanging out of its mouth. The last few inches of the tail were swallowed more slowly than the rest.

A second Passerita being offered shortly after, was declined, and its head ejected from its mouth.

Experiment No. 23.

A green whip-snake, more than three feet long, Passerita Mycterezans, was bitten by a Cobra about ten inches from the head, at 12-37 a.m.

At 12-38, sluggish; moves less actively; gapes, keeping the mouth wide open.

12-39.—Almost paralyzed; mouth now closed; head lying on the side. The body is swollen where bitten.

12-40. Dead.

Dead, was very much more sluggish and vigorous. Much more rapidly, when bitten in two localities by the poison of the Cobra.

Experiment No. 24.

At 12-48 p.m. a Cobra bit a Cobra in three places near the head. They were both vigorous, fresh, and full-grown.

1-10 p.m.—Appears rather sluggish.

At 1-11 this bitten Cobra bit a fowl in the thigh: it died in four minutes.* I should note that it had been partially exhausted by biting the Passerita, which it killed in two minutes.

1-16.—Appears rather sluggish as it lies on the floor.

At 1-35 it appears in its natural state; raises its head, expands the hood, and strikes when threatened.

At 1-43 it was bitten severely in the body, about a foot from the head, by a Daboia, one of those that have been some time in confinement.

At 1-47 it appeared to be affected; was sluggish, and lay with its hood shrunken and its skin shrivelled. It is possible that in presenting it to the Daboia to be bitten it may have been squeezed, but it did not appear so. It remained in this sluggish state, and was dead at 4-10 p.m.

Experiment No. 25.

A Passerita Mycterezans, (green whip-snake,) rather smaller than the former one, bitten in the body at 1-40 by a Daboia.

At 1-45 p.m. almost powerless. It gradually became more and more exhausted, gaped like the one bitten by the Cobra, and was dead at 2-2 p.m., or in 17 minutes.

The Daboia was one of those long in confinement, and had no doubt become exhausted.

Experiment No. 26.

A large black Cobra bitten in the body by a Daboia at 1-52 p.m., October 2nd, at about a foot from the head.

At 2-20 no change.

October 3rd, 6 *a.m.*—No change.

Experiment No. 27.

A full-grown Cobra bitten by a Daboia in the body at 2-4 p.m.

At 2-20 no change.

Died at 10-30, October 4th.

Experiment No. 28.

A half-grown fowl was bitten in the thigh by a Cobra at 1-11 p.m.

At 1-11-45 it crouched, drooped its wings, rose, staggered, and dropped down.

At 1-13 drooped its wings; rested on its breast, with the point of its beak on the ground.

1-14.—Convulsed and dying.

1-15.—Dead. Died in four minutes.

The Cobra was not quite fresh; it had bitten the Passerita, and had itself been bitten by another Cobra before biting the fowl.

Experiment No. 29.

At 1-25 about four drops of the blood of the above fowl (experiment No. 28) were injected into the hind quarters of a sorex cærulescens (musk-rat.)

At 1-35 eating a portion of the dead fowl, apparently not affected, unless it may be perhaps rather sluggish.

At 5-30 a.m. of 3rd October the musk-rat found dead; appeared to have been dead two or three hours; no sign of any injury, but the syringe puncture in the thigh apparent.

The evidence of experiments Nos. 1, 2, 3, 11, 14, 26, goes to shew that the Cobra and the Daboia are not affected by each other or by their own poison.

The experiments Nos. 24, 27, on the other hand, would prove that the Cobra succumbs to the Daboia. If such really be the

* See experiment No. 28.

ON CHOLERA.

By C. MACKENZIE.

area, and in the valley of the Nerbudda. It is very doubtful among the localities in which cholera is endemic (an original focus). I have already repeatedly had to refer to outbursts of

Cholera was very fatal among the inhabitants of Calcutta and district of Palamow.†

among the prisoners confined in the jail at Shergotty. Dr. Woodburn reports that cholera made its appearance "in these parts in April, 1828, again at the same time in 1829, but not in 1830; in 1831, it visited us at the usual period." It did not admitted, all of these terminated favorably. On the 30th it recommenced, but till the 5th of May only four more prisoners

lully countries of this province, having a climate totally different to what we have here; their difference in food also is equally great. The inhabitants of the surrounding country were

Epidemic cholera was evidently, therefore, severely felt

usual," re-appeared in that station in 1832, confirming Dr. Wood-

witness to, for it was hardly possible to pass through this part of the country without some of the men being seized with

Our attention is again fixed on the Shergotty jail in 1833. Dr. Marshall, the Superintending Surgeon at Dinapore, reports on the 16th July that cholera had broken out among the prisoners "with a malignity surpassing all I ever before witnessed."

"In the end of March and beginning of April, cholera was prevalent to the eastward, particularly at Koonda and in the neighbourhood of Hazareebaugh. On the evening of the 7th April, one of the prisoners in the jail was attacked and died. On the 8th, 12th, 16th, and 18th, cases occurred, and ten more on the 19th. On the 20th, 21st, and 22nd, eight were admitted, all of whom died, excepting one. On the 23rd, 48 cases were admitted, and before eight o'clock in the evening 36 of them had died, and six more died during the night. In the course of the following twenty-four hours, nine more were admitted, six of whom died. From the 25th to the 30th, 27 were admitted and 11 died; altogether 105 cases occurred, and 75 died:" and this out of a community of about six hundred souls.

"It is very remarkable that of the 105 persons attacked, only three were men from this side of the Ghauts; there were a few from the hilly districts to the eastward, but the greater number were from the Nagpore prisoners."

these hill men (Dhangers) are brought from their homes into the plains during our cholera months, as surely do they die off in precisely the manner described by Dr. Marshall five and not only in this jail, but at Saugor and other localities, the same phenomena have been observed.

In August, 1833, cholera was generated among the European the Superintending Surgeon at Allahabad reports that "ten casualties have taken place, nine from cholera. Since I last wrote, the attacks of cholera have been less frequent in very many parts of the division; at Banda the mortality was very great." The Superintending Surgeon of the Cawnpore circle, in his annual report for 1833, observes: "The year has been remarkable for an uncommon degree of heat, and the prevalence of destructive epidemics. This had not been caused by deficiency of rain, the total fall being 30 inches in 53 days, while last year it was only 18 inches, and the season was a most healthy one. From these epidemics the native troops suffered comparatively little; and while cholera raged during the months of August and September with a virulence hitherto unknown, in the city of Lucknow 26 died." "Every slight fall of rain was attended with an increase of the disease, and it did not entirely disappear till the weather cleared up."

It is evident from the preceding history that the invading cholera of 1841 was only generated as far west as Benares,

to enquire if the exceptional seasons of 1832, as described by the Superintending Surgeon of Cawnpore, may not have influenced this phenomenon.

It will be noticed, the amount of rain which fell during the year 1832 in the Cawnpore district was far less than usual, a fact also noticed by Colonel Baird Smith, for on account of the drought thus caused there was a partial famine in these parts in 1833. This idea is somewhat confirmed by subsequent events; for no sooner had the rain of 1833 set in, than the cholera of 1831, which until then we may suppose to have been suppressed for want of moisture, instantly burst out, and committed the terrible ravages described by the Superintending Surgeon of Cawnpore.

In 1834, the North-West was again under the influence of an invading cholera, which, although not characterized by any great power of diffusion, was generated with considerable force in certain localities. On the 7th August, the Superintending Surgeon of Agra writes that "cases of cholera took place towards the end of the month (July); in the city the disease has been very severe, yet in the jail not a single case has occurred." From Muttra Dr. J. McRae reports (5th September, 1834) "during the month of July it rained incessantly; about the middle of the month cholera made its appearance in the city of Muttra and carried off great numbers. The rains ceased suddenly on the 3rd of August, and none fell till the 22nd; during this interval of hot, dry, sultry, enervating weather, the cholera spread all round Muttra, and from the 14th to the 22nd it prevailed to a frightful extent. Amongst the Europeans of the 3rd Troop Horse Artillery, it was characterized by early collapse of the system; blueness of the skin had commenced in several cases at so early a period, that the individual seized had no other symptom of indisposition except a feeling of general debility and slight relaxation of the bowels; vomiting scarcely made any part of the complaint; spasms were seldom present in the early stages."

At the commencement of the year 1834, the disease, in a very virulent form, was generated in Sylhet, Cachar, and Assam. Dr. Brown reports from the former district that "about the middle of May cholera broke out in Sylhet for the second time in the year, and spread with great mortality; it raged with equal violence from the 4th to the 22nd, when the weather was excessively sultry." "Cholera generally appears twice a year in this district as an epidemic, and at all times sporadic cases are met with." In fact, the inhabitants of Sylhet and Cachar were never absolutely free from cholera.

The disease was very prevalent at Dinapore throughout the whole of the first quarter of 1834.

We must now briefly consider a few details regarding cholera in the Madras Presidency. In 1833, H. M.'s 62nd Regiment, while on the march from Chittore to Masulipatam, was attacked with a most severe form of cholera; no less than 200 cases occurred in this regiment. Among the troops forming the northern division of the army, the mortality in 1833-34 was much increased from the prevalence of cholera* in the Hyderabad subsidiary force, "the mortality being greater than usual in 1833-34 and 1835 in consequence of the great prevalence of fever and cholera."† In the Nagpore Division, "cholera was very prevalent during the years 1833-34 and 1837-38, the greatest number of deaths occurring in June, July, August, ... October."

In the central division of the army, in "the years 1833-34 and 1838, the mortality was considerably increased, and almost solely by cholera."‡

In 1833-34 cholera was most severe among the troops of the Mysore Division. In the Ceded Districts, which, Bellary excepted, are well drained, the mortality during the two years, the Eastern and Western ... [illegible]

about 1,600 feet above the level of the sea, "cholera prevails to a greater extent than in any other division of the army (Madras), the percentage of admissions as well as of deaths to strength being much above the average. It has frequently been observed that regiments, while marching through this division, are particularly obnoxious to outbreaks of this disease. The question here arises, to what influence are these attributable? and if to a deleterious exhalation emitted from the soil, how is it to be explained that a regiment shall march over ground from one station to another in a perfectly healthy state, while in another body, on the same road, after an interval of only three days, cholera shall commit ravages? while, again, instances occurred where a regiment has been severely attacked with cholera in its march, and another following the same road, after an interval of only two or three days, has altogether escaped." "The mortality was greatly above the average in 1833 and 1838, the result in both years of epidemic cholera."*

The Central Provinces and valley of the Nerbudda were also under the influence of a widespread epidemic of cholera in 1833-34. The Superintending Surgeon of Saugor states that the disease appeared at Hoshungabad at the close of the year 1833, "having raged epidemically for some time previously in the neighbouring villages. When it appeared, the weather was unsettled, the wind variable, and the temperature unusually high. The disease committed great ravages at Gurrawarra. During the months of October, at Seuni, "easterly winds, as in the preceding year, prevailed in the end of June and July, when cholera first appeared, raging violently among the population." He adds, "cholera and fever may be considered as endemical" in these parts. During the year cholera was prevalent among the shipping in the Madras Roads; and incidentally we hear of it having appeared among the crew of the *Patrick* while at Manilla† and at Trincomalee.

In May, 1834, the Superintending Surgeon of Saugor reports "that cholera is raging throughout the high table-lands to the south, and at Mundla with greater severity than it has ever before been known. In the neighbourhood of Bhilsa and Jhansi, the roads have been nearly impassable from the putridity of the numerous bodies. Some of the deaths have been very sudden, only two hours having elapsed from the first moment of attack." Among the European troops in the Bombay Presidency, the deaths from cholera amounted to 35 in 1831, to 113 in 1832, and to 263 in 1834.

It is evident, therefore, as I before remarked, that the whole of the Madras Presidency, Central India, and Bombay‡ were under the influence of a vast outburst of epidemic cholera in 1832-33-34, which probably spread to the Hadjezy in 1835, and into the basin of the Mediterranean, and Europe, in 1836-37.

In 1835, epidemic cholera was at a very low ebb throughout Bengal; the districts of Chittagong, Beauleah, Midnapore, Purneah, and Hazareebaugh suffered to a ... the troops in the latter station being also affected during May and June. The prisoners and troops in the North-Western Provinces and the Saugor divisions were well nigh free from cholera. The Superintending Surgeon of Meerut, however, described an outbreak of the disease in April. "The weather early in the month was ... with prevailing easterly winds, several cases of ... occurred among the Camel Corps. On the ... the temperature fell ... was ... sultry. A number of cases of cholera appeared among the Camerontians, the rest of the troops remaining free from the disease." It does not appear that the convicts, civil population,

* Report on the Medical Topography of Madras, 1842.

† Report on the Medical Topography of Nagpore, Hyderabad and Nizam's Dominions, and Jaulnah, published by the Madras Medical Board, 1841.

* Report on the Medical Topography of ... Districts, 1842.

† Report on the Medical Topography of ... Madras, 1842.

‡ Report on the Medical Topography of ... Bombay, 1842.

for this outburst; it is remarkable, however, that although the number of men in all the ranges of barracks were equally affected, yet the mortality among those occupying the old

localized, however, was the disease, that no cases occurred among the native troops, or the prisoners in the station. The Artillery

the men of a detachment of H.M.'s 21st Regiment, which left Fort William on the 20th February for Hazareebaugh. During the march, it was ascertained that "cholera raged in the villages on the Calcutta road between Bancoorah and Hazareebaugh; three men and one woman were attacked during the march." "On the 26th of March, two children of H.M.'s 49th Regiment at Hazareebaugh were seized with the disease, and both died. On the next day the pestilence began to prevail generally in the regiment, with the exception of the flank companies, attacking men, women, and children, and raging violently in the sudder bazar, 20 deaths having occurred on the 26th—all, in fact, that were attacked; for it was reported that not one had the good fortune to recover. The next day, out of 20 cases from the Sudder Baazar, tended. The immunity of the flank companies from cholera was very remarkable, not a case having occurred in the barracks, but in hospital four men of

the hospital attendants was no less striking."* Only one case occurred among the European Artillery, and none among the Native troops.

From Dinapore the Superintending Surgeon writes on the 15th of April:—"Seven men, four women, and three children were admitted with cholera during the morning; the disease raged suddenly and fatally, as the simoom of a desert." On the 4th of April we hear "that cholera has been raging in the town of Ghazeepore for the last two months among the troops; the first case occurred on the 11th of March. The stage of collapse had begun in almost all of them before admission, and appears to have commenced immediately after the patient was taken ill." From Tirhoot Dr. McKinnon reports, 1st June, "that cholera is raging very fatally throughout this district." In July, cholera broke out in Benares, and prevailed to an alarming extent during that and the succeeding month. The

mortality from cholera among the Europeans occurred between the 6th and 25th of August, since which time the disease among

cruelly ravaged by the disease from June till October. Dr. Spilsbury adds that, since his residence in Jubbulpore, "cholera has usually visited the district every three years, travelling in

seldom visits the lines or regimental bazars, the jail is quite exempt, yet the intercourse between the town and cantonments is

to and fro throughout the day."

During the year 1837, cholera was very prevalent throughout the whole of Lower Bengal. Excluding the Alipore Jail, I find that of some 15,000 prisoners in the Presidency circle, no

whereas in the Agra, Meerut, Kurnaul, and Nusseerabad circles, hardly any of the prisoners were affected by this disease. The same remark applies to the troops in these localities; nevertheless, in the last quarter of the year, cases of cholera were recorded, though few in number, from almost every large civil or military station throughout the North-West. We have, therefore, in the history of the cholera in Bengal during 1837, a repetition of the phenomena of 1817, 1826, and 1833: a vast outburst of the disease occurring throughout the whole of Bengal, gradually advancing to the west and north-west, as far as a line corresponding to about 78° east longitude; then halting for the cold season, but in the meantime throwing forward its feelers into the provinces beyond the invaded area.

Early in March, 1838, the Chief Magistrate of Calcutta called the attention of the Medical Board "to the number and severity of the cholera cases among the inhabitants of this city;" at the same time, 126 men of H.M.'s 26th Regiment in Fort William were seized with cholera, one-fourth of the whole being from among men exposed on sentry duty at the gates of the fort.

The eastern districts, including Chittagong and Assam, were under the influence of a severe outburst of cholera. Among

was prevalent throughout the year. H.M.'s 31st Regiment at Dinapore, and H.M.'s 16th at Benares, were similarly affected.

The troops at Cawnpore were terribly stricken with cholera in June. We have abundant evidence, therefore, of the reproduction of the disease over the invaded area of the previous year; beyond this, cholera was generated throughout the North-Western Provinces in 1838, and in Cabul in 1839.

On the 20th of April, 1838, Dr. Ludlow reports from Agra, that "among the great number of destitute poor, amounting now to nearly one hundred thousand souls, collected in and about the city, cholera and fever prevailed to a woful extent." I need hardly remark that 1838 was a year of famine in the North-West; producing this famine was not felt in the Allahabad circle, and only in one or two sub-divisions of Cawnpore.* We have no history of a deficiency of rain in the latter district as in 1832.

The troops at Muttra were attacked by cholera in the beginning

Clapperton reports in May, from Mhow and Mundlaisir, that

March, "the climate of the latter province being very much

Kurnaul, Deyrah, Saharunpore, and the hill station of Mussouree were under the influence of a fierce outbreak of cholera in July, the epidemic raging more or less violently until September.

The Superintending Surgeon of Meerut remarks that at the outbreak of cholera in his circle, "the atmosphere had been particularly hot and close, the rains fallen having produced very little diminution of the temperature." "The disease has only

in a few instances partaken of the spasmodic form, but has been one of collapse, a few watery motions, succeeded by sudden prostration of all the animal powers, and the patient died without a struggle in a few hours." It is useless my entering into further particulars regarding the invading cholera of 1838. The above quotations, which, it must be remembered, were written by officers widely separated from one another at the time and on the spot where the disease appeared, seem to me precisely the independent evidence we require to prove the fact of the districts belonging to this Presidency, west and north-west of the Cawnpore division, being under the influence of a vast outburst of cholera in 1838.

Our troops entered Cabul in 1838, but no cases of cholera occurred among them until the following year. Dr J. Atkinson reports from "near Cabul," that early in August (1839) "the camp at Quetta received a formidable visitation from cholera, which naturally produced great alarm. The cases were numerous and very fatal; the natives of the country were dying daily in great numbers, both in the town of Quetta and the neighbouring villages."* We have in this and subsequent communications, evidence that during August, 1839, cholera had passed into Cabul. As I supposed the epidemic of 1828 had done in 1829; nor would it have been possible for us to have traced the further history of the epidemic of 1838, had not our unfortunate army happened to have been in the country at the time.

From the Madras reports, it is evident that cholera was again very prevalent in that Presidency during the year 1837-38. The number of native troops suffering from cholera amounted to 12 in 1836, to 63 in 1836, 702 in 1837, 1,108 in 1838, 530 in 1839, and 270 in 1840 †. The disease was very severe at Bellary among the men of H.M.'s 39th Regiment. On the 21st and 22nd of March, there were a few showers and much lightning. On the evening of the former day the first case of cholera appeared, and between that date and the 21st of May, 75 cases of cholera occurred in the regiment ‡.

Among the European troops serving in the Presidency of Bombay, the deaths from cholera amounted to 62 in 1837, to [illegible] in 1838, and to 259 in 1839.§

Throughout 1839 we have accounts of cholera from almost every large station in this Presidency, the epidemic being reproduced over the whole country invaded by it in 1837-38. The following table, compiled from the reports contained in the proceedings of the Bengal Medical Board, illustrates these facts [illegible]

[illegible] Showing the average Strength, and number of deaths from cholera among the European troops in the Bengal Presidency, for five years.

Years.	Troops stationed to the East of the Hooghly. Average strength.	Troops stationed to the East of the Hooghly. Number of deaths from cholera.	Troops stationed to the West of the Hooghly. Average strength.	Troops stationed to the West of the Hooghly. Number of deaths from cholera.	Remarks.
1836	6,797	20	4,797	3	
1837	7,392	38*	5,359	1	
1838	7,144	129	4,906	16	
1838	6,375	32	7,122	86	
1839	6,011	[illegible]	5,070	12	* Of these, 21 deaths took place in the Hospital ship at Calcutta.

* MS. Proceedings of Medical Board.
† Report on Epidemic Cholera, by Dr. Lorimer, p. 54.
‡ Report on Asiatic Cholera, by S. Rogers, p. 50. London, 1848.
§ Transactions of the Medical and Physical Society of Bombay, No. 1, New Series, p. 98.

I may here remark that I find carefully kept returns in the proceedings of the Medical Board regarding the health of our troops and prisoners in the settlements of Singapore, Penang, and Malacca from 1827 to 1840; and, as far as I can ascertain, not a single death from cholera occurred either among the troops or convicts at any one of these stations during this period. One or two instances of cholera are reported, but the patients recovered. And I find the Madras records confirm the fact that epidemic cholera was absolutely unknown in our eastern possessions during the period under review,* although within these fourteen years we have clear evidence of three great outbursts of the disease over Hindoostan, our eastern settlements being in constant and speedy communication with India, receiving our convicts, and being absolutely unprotected by anything approaching to a system of quarantine.

ANTISEPTIC DRESSING: A MODIFICATION OF LISTER'S METHOD. KELO OIL, A CHEAP AND EFFICIENT SUBSTITUTE FOR CARBOLIC ACID.

BY J. NEWTON, M.A., M.D.

FOR more than a year past, in the Mission Dispensary at Subathoo, I have pursued Lister's method of treatment, in more than a hundred cases, with results so uniformly successful and satisfactory, as to convince me that in it we have a most valuable means of relieving suffering, which we have no right to neglect.

Most of the antiseptics, though easily used in the form of a lotion, are not of a convenient consistency for employment in a paste, after the plan recommended by Professor Lister. Probably no one substance of this entire class is more admirable than the chloride of zinc, introduced to the notice of the profession a few years ago by Mr. DeMorgan, by whom it is, I believe, still employed with great success in London. But neither chloride of zinc nor [illegible] acid, seems well [illegible] in the form of a paste, being liable to decomposition when used with any ordinary vehicle. In every respect *kelo oil*† answers, better than anything else with which I am acquainted, the end in view,—that is, of securing a *cheap* substitute for carbolic acid. It is apparently rich in creasote, it mingles readily with oil, and it is certainly very cheap, being sold in the Simla and Subathoo bâzaars at the retail price of four annas a quart bottle, while kerosine and the oil of turpentine, either of which might be mixed with the paste, cost [illegible] a quart bottle. The antiseptic property of kelo oil, though doubtless inferior to that of pure carbolic acid, is yet very great, having proved sufficient in all the numerous cases in which it has been used, to prevent decomposition or fermentation.‡

Whether Pasteur's theory of the influence of [illegible] germs in promoting suppuration is correct, or whether, as is believed by some high authorities, it is wholly untenable, it is not my purpose here to inquire. I only maintain, independently [illegible]

* Report on the Medical Topography of the [illegible], Madras, 1838; and the *Madras Quarterly Journal*, Vol. I, [illegible], 1839.

† [illegible] its appearance and properties to the [illegible] Europe.

‡ To test its power in this respect, I laid aside some of the paste used in dressing [illegible] wounds, in the hottest [illegible] At the end of a fortnight it was [illegible] The portion mixed with kelo oil was [illegible] the [illegible] was [illegible] kelo oil to it would [illegible] With the kelo oil, it would have fermented and [illegible]

amputation or resection, go on slowly, but surely, to perfect

A [illegible] the cases (chiefly of minor surgery) met with in daily dispensary practice. Not only so, but compound fractures, stumps after [illegible] the evacuation of abscesses, ulcers, &c. Moreover, this principle [illegible] with excellent effect to burns and circumscribed patches of certain cutaneous eruptions, such as eczema (chronic), psoriasis, [illegible] measures) lupus; even the ulcerated surface of cancer.* In fact, the only limitation is in the position of the wound or [illegible] a dressing would, I am sure, be admirably adopted to the simple, soft chancre, after suitable cauterization; but the difficulty of retaining it in most of those situations in which chancres are [illegible] the experiment. Suppurating buboes, however, as well as suppurating lymphatic [illegible] may be so treated as I have tested in [illegible]

The process of applying the dressing involves three distinct steps:—1st, the preliminary washing; 2nd, the careful adjusting and fastening of an antiseptic curtain; 3rd, the application of an antiseptic paste, together with the covering with sheet lead, and the final bandaging of the whole.

[illegible] wounds, especially those in which there is reasonable hope of union by the first intention, nothing more is necessary than [illegible] to wash the neighbouring skin free from blood. If then Lister's method of treatment be thought advisable, the antiseptic curtain can be applied at once, as detailed in the following section. [illegible] already suppurating, or of ulcerated surfaces of every kind, these should first of all be carefully cleansed with soap and warm water. The surface, say of the ulcer, should then be thoroughly bathed in some alterative antiseptic solution. Any one of the following may be used with advantage. I [illegible] found to answer best are the following:—Liq. zinci chloridi,

The method of applying any of the above is by no means a matter of indifference. Incomparably the best plan is to use Richardson's spray-producer. This should be made to play with considerable force over the entire ulcer, the nozzle being held near the surface. When there are sinuses, the jet should be directed into these by introducing the nozzle. In many cases [illegible] this proved too coarse, Wood's hypodermic syringe. Thus, [illegible] thrown well up into deep and tortuous sinuses, and the results thus secured are very striking. No amount of mere washing will ever disinfect an ulcer so thoroughly or so speedily as the process above described.

[illegible] large enough to overlap by two or three inches the borders of the wound or ulcer. Bits of tape should be attached to it at various points, and by means of these it should be securely fastened, the whole of its surface being carefully adapted to the surface of the body; so that no air can get in, except what has been filtered through the cloth. Before it is applied, this curtain should be soaked in a mixture of carbolic acid one part and sweet oil* four parts. Other substances, such as kelo oil, would doubtless answer well for this purpose, especially in cases of minor importance; but hitherto, while I make up the paste with kelo oil, I have preferred to use at this stage of the proceedings dilute carbolic acid, the quantity of the acid required being so small as to make the cost a trifling consideration. After all that has already been said of the importance of an antiseptic curtain, I need hardly repeat in conclusion that it should be adjusted and fastened with the greatest care, since it is intended to last for several weeks at least.

[illegible] washed the ulcer, and then shut it off from the outer air by a well-arranged antiseptic curtain, we proceed to cover the latter with a thick layer of some antiseptic paste. This should, while it protects the curtain beneath from the outer air, be a reservoir of some antiseptic substance, while it is, at the same time, soft and moist, thus keeping the tissues underneath in the state best adapted to promote the natural process of nutrition and repair. For a long time I used with success the paste recommended by Professor Lister, consisting of common whiting worked up into a putty with the mixture already mentioned of carbolic acid and oil. Finding it difficult at times to get carbolic acid, and wishing for some satisfactory substitute for the coarse and gritty whiting usually sold in the bazars, I was led to try various combinations. The following, on the [illegible] completely satisfactory results, and which I now use almost

quantity; stir over the fire so as to form a thick paste; keep this up as long as possible without burning the flour, the object being to render the paste very tough and dry, in order to admit of a large quantity of kelo oil. When the mass is cool enough to be conveniently worked, pour upon it a mixture consisting of kelo oil three parts, to apricot (or any other) oil one part. As much as possible of the fluid should be well worked into the paste, care being taken that the latter become not too soft. The paste thus formed is now ready for use, and may be put away in a metallic or porcelain vessel, which should be kept closed to prevent either evaporation or the admission, in the rainy season, of excessive moisture. So rapid, indeed, is the absorption of moisture in the hills in the rainy season, that the paste cannot, with the greatest precautions, be kept tough and firm for more than a day or two. To save the trouble of making it afresh every day, I have lately, in very wet weather, resorted again to the old putty made with pipe-clay. This has, however, more than ever, by contrast, convinced me of the superiority of the poultice, whenever the season admits of its being used. The putty, I may here remark, may be made like the poultice, with a mixture of kelo oil, instead of carbolic acid, with common oil, in the proportion of about three of the former to two of the latter.

When the antiseptic paste, whatever be its composition, is to be applied, it is well to enclose it in a piece of muslin twice as large as the antiseptic curtain. This should first be dipped in kelo oil. The paste should then be spread evenly over one-half of it, the layer being from half an inch to an inch in depth. Over this should be folded the remaining half of the muslin. The ends and sides being then neatly tucked in all round, there will be no danger of any portion of the paste being pressed out. The whole can now be placed upon the antiseptic curtains. Around it should be put a thick border of cotton wool to protect the skin from the pressure of the margin of the *sheet lead*,* a piece of which, overlapping the paste, should now be laid over all. Finally, the entire dressing should be firmly secured by some turns of a common bandage.

Under ordinary circumstances, the paste should be renewed every third or fourth day; the latter is hardly safe if the suppurating surface is very large. In removing it, care should be taken not to disturb the antiseptic curtain, which should be kept closely adherent to the surface of the ulcer. The mere presence of *pus* should never induce us to remove the curtain, so long as there is no foetid odour. No matter how foul it *looks*, we should let it alone. But if there be any degree of fœtor, there is something wrong, which calls for prompt redress. In such cases it will inevitably be found, either that dressing was not adjusted with sufficient care in the first place, or that it was afterwards suffered to get loose, or, finally that the interval allowed to elapse since the previous dressing has been too great. At any rate, whatever the cause, if the antiseptic be found to have an offensive smell, it should be removed at once. The ulcer should then be washed as at first, then bathed by means of the spray-producer with sulphurous acid, some other antiseptic lotion, and a new curtain should be applied with greater care. If, however, there be no fœtor, we may rest assured that all is right. The old antiseptic curtain should at once, without being disturbed, be mopped with some fresh carbolic acid and oil (1 to 4), so as to saturate it as completely as possible. Fresh paste should then be applied, enclosed in a fresh piece of muslin, and the dressing completed as at first.

Slowly, but very surely, a case thus treated will go on to a cure. After some weeks, the curtain may be lifted to see what progress has been made. The change will sometimes be very striking. If there be but a slight superficial ulcer left, it may be well to discontinue the method of dressing above described, and to employ either a simple water-dressing, or, what is better, a weak carbolic acid lotion. I may add that, in a large proportion of cases, especially in cases of ulcers, lupus, &c., I administer, as a matter of course, tonics and alteratives conjointly with the above local treatment. Iron, arsenic, atees, quinine, and strychnia in various forms and combinations are, as every practitioner knows, invaluable in the constitutional treatment of most of the maladies under consideration.

N.B.—Since the above was written, I have repeated several times the experiment of keeping, for a week or more, the paste described in this paper, consisting of flour and kelo oil mixed with a small proportion of apricot oil. In *every* case the paste, when kept more than five or six days, has been found covered, to some extent, with a superficial fungous growth,—a white mould. Practically, this fact has proved to be of no consequence. The paste has in no case undergone any fermentative change, nor has there been any ill odour. It has, therefore, been used freely as a dressing, with all the good effects ascribed to it above, the antiseptic curtain being always soaked in the mixture of carbolic acid (1) and oil (4). In the experiments made just before the rains, there was no such mould. I attribute its presence *chiefly*, however, to the fact that I have found it difficult, of late, to get kelo oil of a good quality. It is adulterated, often largely with water (?). I need hardly repeat that the use of kelo oil is recommended merely on the score of economy: its antiseptic power is far inferior to that of carbolic acid. A small proportion of the latter might be added to it with advantage.

SURATHOO, *September 17th*, 1868.

MEMORANDUM OF POINTS TO BE STUDIED, CHIEFLY WITH THE HELP OF THE MICROSCOPE, IN *POST-MORTEM* EXAMINATIONS OF LEPROSY.

BY J. NEWTON, M.A., M.D.

BY way of preface, it may be said that a special record of each case should be kept separately. Yet the facts should be noted according to a fixed plan, in systematic order. This should be done partly in order to elicit the utmost amount of information, and partly for future convenience in tabulating the results. Each case, too, is best studied with primary (though not by any means with exclusive) reference to some hypothesis as to the pathology of the disease; either the one given below, or some other.

I.—Obtain, if possible, a history of each case; especially a history of the last illness and immediate cause of death.

II.—Observe carefully the external appearance of the subject to be dissected. Specify the particular type of leprosy, whether anæsthetic or tubercular, or mixed. Record the number, character, and extent of the external lesions.

III.—The hypothesis which I, for my own part, would like to have tested may be stated thus:—Whatever the specific cause and whatever the accidental type of the disease, leprosy is *essentially an affection of the gelatine-yielding tissues*, *i.e.*, of the connective tissue of Virchow, together, probably, with the epithelial tissues likewise. We should examine them

1. Generally, all the tissues of the body, belonging respectively to these two categories, noting any peculiarity that may

* Neither gutta-percha nor oiled skin, Professor Lister tells us, will answer the purpose of arresting the vapour of a substance so volatile as carbolic acid. Hitherto I have obtained an abundant supply of sheet lead from the Lining Department.

This symptom is most marked between the shoulder-blades and about the vertebro-sacral junction. Is there any visible lesion

5. Is it possible to discern, by means of the microscope, why (and vaso-motor?) primitive fibres, whilst the motor fibres appear always to escape? Is there atrophy or degeneration of the

disorder of either of those, it would be interesting to know whether there had been a corresponding peculiarity in the

functional derangement of the first two.

of the British Government. Wherever they went, they carried

by the charmer's *master*, and places his life in the hands of the ignorant and presumptuous quack. However large the num-

to be reached? Many might say that the numerous native

taught the dignity of the profession? Left to the only resource

system of medicine they are taught, they receive a shallow education, to prove in after-life that "a little learning is a dangerous thing." As hospital assistants, of course, they are a useful class of

them out as independent practitioners to deal with human life? Yet these people settle themselves down, and practice the profes-

ment send them out in charge of dispensaries. I would be the last person to disapprove of this, as they are the only set of doctors who can reach the general mass of the people; but I

before they are allowed to take such onerous tasks: and how

with practice and experience: and without study of books or

years since that vernacular medical education has been intro-

studying the vast science.

Instead of multiplying words, I would here note my proposal

be imported by which this poor and neglected class of people can be helped out of their difficulty? I think if a society be formed on the model of the Sydenham Society, for inviting and

bodies are working workers in the world, and division of labour

cumstances to do anything individually. A poor Sub-Assist-

the press a heavy estimate of costs is given to him; he feels his pocket and gets frightened; after some consideration, he borrows money with the hope of repaying from the proceeds of

to the poor students and native doctors in buying his book, he makes the price low, and finds the sale of the book has not half covered his costs. Is it not discouraging enough to make him give up the idea of a second attempt?

I think now it is time for somebody to come forward and

from the metropolis, I cannot do anything, else I would not have asked any one to take up the task, but I would devote my head and heart in co-operating with such a body.

The corporation may be formed and managed in the following way:—1. The association should be formed of all medical men, whether in the metropolis or out of it. 2. Contributions should be raised by agents in different parts of the country, and formed into a fund. 3. Sub-Assistant Surgeons should be asked to write one book each, and make it over to the association. 4. Four or five of the books should be published every year from the fund. 5. The fund should be aided by permanent subscriptions. 6. The subscribers should be supplied with a copy of all the publications. 7. The books should be sold at a moderate price. 8. Government should be asked to subscribe for a few copies.

In this way a great deal can be done to render the medical science into the vernaculars of the country. If no individual comes forward to unite the medical profession in this good and great work, it is well worth the attention of the Bengal Branch of the British Medical Association. If the association take this work in hand, and become really resolved to do some tangible and lasting good, then I think many will join and take especial interest in the institution.

It has been proposed of late by many to try and impart some education to the *hakeems* and quacks that are practising all over India, and thereby introduce the practice of European medicine in India, but I fear that is a round-about way, and does not seem likely to prove an effectual means. Nothing can be so direct and sure of producing a permanent good as the multiplying of native doctors, and some improvement in their education. They would in time replace these quacks, and would help the profession with their large experience. From these there can be no fear of imposition. A quack or a *hakeem* may be taught to treat diseases more skilfully, and more in accordance with modern science, but where would he get that professional dignity which is so essential to a medical practitioner? This is my appeal to the profession and the numerous readers of the journal. My sense of duty has actuated me to make this appeal, and I hope that no one will pass it off without giving a practical response.

Bhatgulpore, 17*th June*, 1868.

CASES FROM PRACTICE.

NOTES ON A CASE OF ABSCESS IN THE BRAIN.

By [illegible] Newton,

Civil Surgeon, Kumool.

Abdoolla, aged 40, was admitted into the dispensary on 2[illegible] May, 1868, suffering from [illegible]

Previous History.—A man [illegible] had in this village come to [illegible] and [illegible] him to the city, who stated that Abdoolla complained at first of great pain and a burning sensation on [illegible] he would fall down, with slight convulsive movements of [illegible] attacks increasing [illegible] even [illegible] day. [illegible] nearly a week.

On admission, he was able to walk a little, talked sensibly and clearly, [illegible] dizziness; had [illegible] seven fits during the first day, being very slight; trembling of the extremities, [illegible] &c.; consciousness returning very quickly.

21st.—Was [illegible] as at the same hour [illegible]

22nd.—Asked for opium; said he was in the habit of [illegible] it, and was in great want of it; gave him two grains; had only [illegible] during this day. On questioning him particularly, said he felt a weight on his head and sense of heat, but his [illegible] was the great dizziness. Always felt cloudy, and keep warm; woollen clothes on him during the heat of the day. On eating, or being touched, he invariably placed his fingers on the right side of his head. There was nothing to attract attention about his pupils, pulse, or skin.

23rd.—At 4.30 a.m. the Native Doctor saw him. He was sitting up in his bed, and to enquiries said, "Aj achcha hai." At 5.30 he was found insensible on bed. At 8 o'clock I saw him: he was quite insensible, breathing a little hard, as though in a heavy sleep; pulse weak, but regular; pupils nearly natural; skin cool, and no sweats. On touching him, he instantly moved, and seemed morbidly sensitive to touch, but made no [illegible] on coming, however loud. I [illegible] a stream of cold water [illegible] on his head, but finding it produced trembling of the extremities, [illegible] placing his fingers on his head. I stopped it, as it apparently distressed him; during the day pus came from [illegible] no return of consciousness, and he died at 10 p.m.

The treatment consisted of, first, a good cathartic purge, a blister to the nape of neck, head shaved and rubbed with croton seeds, and cold water cloth on the head, with good nourishing diet.

Post-mortem, 10 hours after death.—Cerebrum congested; membranes slightly adherent to the brain. Pia mater congested. On opening the membranes, pus oozed out at the back; on removing the [illegible] quantity of serum came from the spinal canal. On examining the brain externally, a small orifice, from which pus was oozing at the most posterior part of the right hemisphere, was seen. On opening this, a cavity, the size of a [illegible] orange, was found, containing about 2 ounces of pus; this abscess occupied the posterior lobe of right hemisphere; [illegible] externally to [illegible] the pus [illegible] and yellow. The left hemisphere healthy; the left ventricle contained about three drachms of serum, the right none. The puncta [illegible] was pinkish.

Remarks.

I [illegible] to give as [illegible] this [illegible] possession, [illegible] also because the symptoms [illegible] different to the only other case I can find on record amongst [illegible] my possession. [illegible] A [illegible] aged 4, had been ill three months; had first been seized with convulsions, and on recovery was found paralysed on left side: [illegible] right entirely insensible to light, the left nearly so. He was apparently blind of the right eye. He placed his hand on right temple and said 'pain, pain.' This boy died in convulsions. At the post-mortem examination, an abscess, containing eight ounces of greenish-yellow pus, was found in the right middle cerebral lobe, extending close to the convolutions.

"The President of the Pathological Society said the great interest of the case arose from the fact that, though the abscess was evidently of old date, the child was peculiarly intel[illegible]

In the case I have reported, the man was sensible to within a [illegible] death; [illegible] panied with convulsive movements of other parts of the body, and the pupils were not dilated; and it was also evident that these abscesses were of old date. The situation of the abscesses was similar to the one in the case quoted, the one in the [illegible]

[illegible]

splints, and the child comfortably placed in bed, and given a little stimulant. There was very slight heat of skin with

Wounded Fingers.—Dr. Shortt is expected shortly to arrive from Indore, suffering with loss about a dozen and a half of the middle joints of [illegible] many of which [illegible] Zoological Society's Gardens from Dr. Day. The [illegible] species known as ophiophagus [illegible] and it [illegible] and if they succeed [illegible] Dr. Shortt [illegible] with perhaps [illegible] Dr. Day [illegible] them [illegible]

Notices to Correspondents.

[illegible]

The Indian Medical Gazette.

NOTICE.

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HARE STREET, CALCUTTA. WYMAN BROS., *Proprietors.*

RIVERSIDE DISPENSARIES.

It is generally admitted that the earlier remedial measures are brought to bear upon disease, the better for the sufferer. Nowhere is this truth more forcibly illustrated than in the treatment of cholera. And we venture to affirm that in direct proportion to the early application of the treatment will be the chances of recovery. That [illegible] so, it has long been [illegible] a matter of surprise that [illegible] have been [illegible] to prevent, [illegible] the [illegible] of the [illegible] cholera, which [illegible] in the [illegible] on the river in Calcutta, than that on the [illegible] The [illegible] of the latter [illegible] to himself the task of drawing [illegible] from [illegible] than four years ago, and urging the [illegible] in connection with his scheme for a new Sailor's Home, Calcutta is the hotbed of cholera; but more cases originate, as [illegible] than in many other parts of the town, not even excepting Lall Bazaar and [illegible] which cholera is [illegible] Indeed, but [illegible] that [illegible] [illegible]

[illegible] the treatment of disease amongst the crews of the shipping have been, and still are, as follows:—A medical practitioner from the [illegible] upon the [illegible] and the [illegible] in harbour. A single practitioner has frequently, in this way, the charge of several vessels, and his duties consist in visiting these every morning, [illegible] if necessary, and [illegible] for whatever [illegible] may be. The [illegible] on board the vessels

for the comfort of the sick are naturally very imperfect; and consequently, where the sickness is likely to be severe, it is very common for the practitioner to order such patients to be sent to one of the hospitals on shore; or, if a man should be taken seriously ill after the morning medical visit, he is so sent by the officer on duty. Should the disease be cholera, the time which must necessarily elapse between the despatch of the patient and his arrival in hospital may seriously affect his recovery, if it does not lead to a rapidly fatal result. The statistics of the two principal hospitals in Calcutta, the General Hospital and that attached to the Medical College, show a large *real* mortality in those cases which have been taken from the shipping. This is doubtless due in part to the long distances which the sick are required to travel before they are brought under effective treatment.

It has been proposed that riverside dispensaries should be erected at convenient points on the river bank; and that all cases of cholera should be transferred to them, in the first instance, from the shipping. The Bengal Government, in a letter addressed to the Secretary to the Sanitary Commission in April, 1866, suggested the establishment of a *floating dispensary*. The Inspector-General of Hospitals, however, very wisely opposed this scheme, arguing that, unless a vessel of the character of the *Dreadnought* were fitted up with all the appliances, the establishment, and the spaciousness of a well-equipped hospital, no great decrease in the mortality from cholera and other severe forms of disease could be expected. In a subsequent communication from the Bengal Government to the Board of Revenue, dated June, 1866, it was intimated that Mr. Crawford, the newly-appointed Shipping-Master, would be called upon "to report further on the subject when he had acquired more experience in his office." In due course, the Shipping-Master reported favorably of the establishment of riverside dispensaries, and the *fiat* has now gone forth for the erection of one close to Prinsep's Ghât.

The establishment of a riverside dispensary is abundantly justified, and the only regret is that two, instead of one, are not sanctioned. Two have been recommended, one to meet the tide of cholera, at the Esplanade moorings, from the ships in which the patients are at present conveyed at once to the Medical College Hospital, and the other for the shipping moored off Prinsep's Ghât, the first stone of which we may hope shortly to see laid. The plan of the building has been finally approved of; and one question only remains, but that is an all-important one, *viz.*, "who is to pay for it?" It is questionable if the new impost of nine pie per ton upon the shipping will be sufficient to do more than pay for the ordinary hospital accommodation of the town, and that is far from being complete.

The dispensary is to be constructed in one block, and, standing obliquely across the grass-plot between the road and the river, is to face so as to receive as much of the south wind as possible. The block, to be divided in the centre into two wards—each capable of accommodating five patients—will be surrounded by a raised verandah. A small room will be made at each of the four corners, and one of them is to be fitted with a reservoir and tap for the use of *ventilators*. The value of this arrangement has been frequently felt at the Medical College Hospital. The apothecary, whose quarters are ample, will reside in the building.

There can be no doubt that the establishment of this dispensary will, under Providence, lead to the saving of many a life; but we earnestly trust that it will not be diverted from its original purport. It is not a dispensary in the ordinary sense of the word, but a *feeder* to the hospitals on the Calcutta side of the river of a certain class of cases. It is intended especially for the temporary reception of cases of cholera and sunstroke, for the proper treatment of which there is usually no provision on board the ships, and which are to be forwarded eventually—as soon, in fact, as possible—to one of the city hospitals. If the building is used for general sickness, it may be unavailable when most urgently required for its own legitimate use, *viz.*, in the cholera months. Persons applying for admission on other than the grounds specified, should be instructed to seek it elsewhere. Medical and surgical aid would always, of course, be available where it was *urgently* needed; but we strongly protest against the dispensary being allowed to become an ordinary hospital, or to degenerate into what "Jack" would be only too glad to recognize it as—*viz.*, a building in which he could conveniently meet with treatment for the results of his visitations into the Wellesley Streets of the town. The site chosen is very public, and if the resort to it of such patients were encouraged, we very much fear that, at certain periods of the day, the neighbourhood of Prinsep's Ghât would be unapproachable.

The establishment of riverside dispensaries, together with the new mode of charging nine pie per ton to each vessel for the admission of her sick sailors into hospital, will materially affect the nature and extent of the medical practice on the river. We must say something on this subject, as also on the appointment of a Port Surgeon, a denomination of Health Officer who is most urgently required for Calcutta, in a future article.

"AS YOU WERE."

IN May last, the Governor-General enquired of the Secretary of State for India how a Deputy Inspector-General of Hospitals, who may be compelled by ill-health to take leave to England beyond six months during his five years' tenure of office, is to become entitled to the special pension of £250.

It was a generous question, and an opening was offered for Sir Stafford Northcote to do a liberal thing. Six months' leave to a man advanced in life, and with a constitution more or less broken by long residence in India, is, in most cases, next to useless. It is a well understood axiom with most men in this country, that a protracted residence in a cool climate is required to maintain and thoroughly establish the health which has been recovered during the earlier portion of the sick furlough. What will six months' effect? As well might we hope to extinguish the flames of a burning cottage with the contents of a watering pot, as to effect any real good by attempting to restore shattered human health with such a modicum of leave. The time will come, however, we are convinced, when some zealous Bishop will be burned, and then the [illegible] undergo a change.

The reply to Sir John Lawrence's enquiry is highly [illegible] The Secretary merely observes that although [illegible] service of five years, including six months' leave [illegible] entitled to be placed in the rank of Deputy Inspector-General for the purpose of pension, and although on the [illegible] five years' service on full pay, inclusive of all leave as an [illegible] Deputy Inspector-General. If [illegible]

full five years required for the extra pension, his claim to

rests, in truth, upon a very *hypothetical* basis.

The old rates of pension are reduced. £700 a year can no service; but £550 are offered in its room at the end of 30 years, former system, an old servant of the Government *might* hope to live to enjoy his £700 a year from the Government, with £300 from the Medical Retiring Fund. But now a comparative certainty is exchanged for a *chance en Espagne*. If it be intended to confer a real boon upon the seniors of the medical service, we would urge, as we urged in a former article, that a pension should be given to a Deputy Inspector-General in annual increments of £50. In no other way would we consider the justice of the case to be met. If long leaves be not allowed to interfere with the tenure of office required for pension, promotion might be seriously

warmly to the justice of our cause. Surely, therefore, we may

THE SUBORDINATE MEDICAL DEPARTMENT

pay of uncovenanted medical officers is attached, is allowed to

NEW FURLOUGH REGULATIONS.

do the rules apply?"

all, *i.e.*, all will be required to notify, on the next occasion of their taking furlough, whether they wish to accept the new given.

of the consolidated sum will be passed. This is the reading of the Pay Examiner. It will be necessary, however, to fix some limit to the number of medical officers who should be considered permanently posted to native regiments (for it is evident that they must be regarded as staff appointments, to be retained during absence for two years on furlough); otherwise, on the return to India of a senior medical officer, he might find himself ousted by a junior, and remain without a charge head of the Medical Department and the Commander-in-Chief.

Meetings of the Bengal Branch of the British Medical Association.*

Minutes of last meeting read and confirmed.

to the bronchitis (which, in temperate climates, almost always might last, in favorable cases, from 6 to 10 years. Bronchitis,

Dr Fayrer alluded to a case of advanced phthisis which had

cough or other chest symptoms, and in which cavities and tuberculous deposit were found in the lungs, and tuberculous deposit in the mesenteric glands.

meeting. Many patients, in whom there was no symptom or suspicion of phthisis, were found after death to have formerly

if not pathologically, curable.

ularly when the disease had been developed in India, not
ported. The subject of tuberculosis in India was one of
ch importance, that it would be well to bring it before the
ciety in future time. He would now call for a discussion
n Dr Fayrer's paper, read at the annual meeting.

Dr. Fayrer said that he had not been chiefly intended to
ntilement one read by him in 1865 before the Association,
ating out the evils caused by massing sick together. He
shed to cast no reflection on the designers of the Medical
llege Hospital, the last design of which had never been
ecuted, but which, even as it stood, had been, at the time of
s completion, a model hospital, according to the then receiv-
d standard. But the sick were too closely packed, and although
e actual cubic space for each patient was considerable, it was
rely in the lofty, not aerated them. Since the number
beds had been reduced, pyæmia and other like diseases had
creased in frequency.

A discussion followed upon the subject of hospital construc-
on, in which Drs. Sutherland, Fayrer, Francis, Chuckerbutty,
d Charles took part.

Dr. Chuckerbutty said that the very important subject of
spital accommodation should be regarded in several lights:
ace, cost, &c., had to be considered as well as sanitary arrange-
ent. On shipboard, where space was necessarily valuable,
e amount allowed to troops (1,200 cubic feet to each European,
d 75 to each native soldier) was in the abstract actually
nal; but, owing to the limited openings provided for ventil-
tion, the air was seldom breathed, even in the "best way," except in fine weather, when the hatches, &c., must be closed.
ilitary hospitals were built in this country regardless of cost,
th a liberal allowance of space, and on the healthiest sites.
ere being generally no necessity for placing them in large
wns. With civil hospitals the case was different; they must
built close to the dwellings of the poor, for whose benefit
ey are intended, hence their sites were necessarily limited,
d often unhealthy. He considered that, while there were
any faults in the Medical College Hospital, the most had
en made of the available space. The system of perfectly
tached wards exposed on all sides to the air was, of course, the
st, where practicable. He did not see how the plan of having
number of small detached rooms, each containing only one
two beds, could be carried into practice; a hospital so
structed would form a small town in itself. It was of great
nsequence that the wards should be raised considerably above
e ground. Had the wards of the Medical College Hospital
en arranged end to end instead of side by side, the building
uld have required more than a larger area than it now
cupies; and, though ventilation would be improved, on the
her hand the wards would be more exposed than they are now
unhealthy emanations from the city. Even ventilation might
carried too far, as in the Scaldah Pauper Hospital, where the
e access of wind and rain to the interior of the building was
tterly complained of. He agreed with Dr. Fayrer that medi-
l and surgical cases should be separated; and, further, that
ses of essential operation should be kept apart from those of
dinary wounds and ulcers; but he deprecated the collecting
all cases of dysentery into a separate ward. The atmosphere
such a ward would become so foul as to prove fatal to even
l cases of the disease.

Dr. Fayrer did not advocate the system of wards with only
two [illegible]
at every large hospital should contain five or six such wards,
r the isolation of important surgical cases.

Dr. Francis could bear testimony to the deficient ventilation
the wards in the Medical College Hospital, which could not
fully appreciated by visitors in the daytime. He had been
the habit, when Principal, of visiting the wards at midnight,
[illegible]

Dr. Charles said that, in India, the air in the best ventilated
rds became foul at certain seasons. He had served in several
[illegible]
bly the very worst,) but in all the ventilation was more or
[illegible]
apable of accommodating twenty-five men, the air in which
ould remain pure, without artificial ventilation, during those
[illegible]
rgical cases do better in Calcutta when treated in tents than
[illegible]
ases, which even in tents do most indifferently.

Dr. Fayrer thought that surgical cases did as well in tents as in wards at Calcutta, but not better.

Dr. Chevers spoke of the importance, first pointed out by Dr. Sutherland, of isolating all cases of gangrenous dysentery in large hospitals.

Dr. Sutherland said that where this plan was adopted, the mortality from bowel complaints was reduced by one-half.

Dr. Francis thought that Dr. Chuckerbutty over-estimated the amount of ventilation on board transports.

In these vessels a great number of soldiers were ordered to remain on deck during the day and night, according to the system of "reliefs," and hence the cubic space per man between decks was really much greater than that nominally allowed. On board coolie ships, however, with nearly the same means of ventilation, the mortality was very large, because a similar rule was not enforced. He dwelt upon the necessity for enlarging the amount of cubic and superficial space per man, proportionably to the increase in number of the persons to be provided for. A large body required more space, in proportion to their numbers, than a small one.

After some more discussion, the President proposed that the further discussion of the subject of hospital construction should be adjourned to the next meeting.

Dr. Fayrer exhibited a knee-joint in an advanced state of disorganisation, the result of a wound inflicted three weeks before, owing to the patient having been thrown violently upon a heap of glass bottles. The patient had died with symptoms indicative of the formation of ante-mortem coagula in the heart and pulmonary vessels.

A discussion upon the subject of ante-mortem coagula in the heart and their influence in causing death followed, in which Drs. Chevers, Fayrer, and Chuckerbutty took part. Dr. Fayrer believed that these clots often formed suddenly in surgical cases, without any premonitary symptoms, and that the tendency to their formation was best combated by good food, stimulants, and pure air.

Dr. Colles reminded the meeting, that as Baboo Dwarka Nauth Mookerjee's period of duty as House-Surgeon at the Medical College Hospital had expired, and as he himself expected shortly to leave Calcutta, it would be necessary to take steps to elect Secretaries for the rest of the current year.

It was then agreed to call a special meeting on Saturday, the 23rd May, at 9 a.m. for the purpose of electing the Secretaries.

The following gentlemen were then proposed for the office:—

Baboo Chunder Mohun Ghose, M.B., by Dr. Chuckerbutty, seconded by Dr. Francis.

Dr. W. K. Waller, by Dr. Fayrer, seconded by Dr. Chuckerbutty.

Votes of thanks to the out-going Secretaries, and to Dr. Ewart for his address on Medicine, read at the annual meeting, were proposed and carried.

The meeting adjourned at 10-30 p.m., with a vote of thanks to the chair.

A special meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College Hospital, at 9-15 a.m., on Saturday, the 23rd May, 1868, Dr. Chevers, President, in the chair.

The President submitted to the meeting a letter from Baboo Dwarka Nauth Mookerjee, resigning his office as Secretary, his term of duty at the Medical College Hospital having expired.

Dr. Colles also tendered his resignation of the post of Secretary being about to leave Calcutta.

The following gentlemen were then unanimously elected Joint-Secretaries.

Dr. W. K. Waller,—proposed by Dr. Fayrer, seconded by Dr. Chuckerbutty.

Baboo Chunder Mohun Ghose, M.B., proposed by Dr. Chuckerbutty, seconded by Dr. Francis.

The following resolution, proposed by the President, was [illegible]

"That this meeting regrets that Dr. Colles and Baboo Dwarka Nauth Mookerjee have been under the necessity of [illegible] services which they have rendered to this Branch of the Asso[illegible]

The meeting then [illegible] with a vote of thanks to [illegible]

NORMAN CHEVERS, [illegible]

Local Correspondence.

STATISTICS: HOW TO OBTAIN THEM.

Yours, &c.,

I. M. S.

P.S.—

Extracts.

more than thirty, forty, or fifty years ago, and not to the

brought down by hill torrents, have deprived the country of

divisions, the country will be found to have become greatly more damp than it was twenty or thirty years ago, and the

the country; and that any restricted enquiry regarding the

Short Notices of Recent Books.

be much read by junior students of medicine.

doing so lays down the laws of the development of the human

world upon. When we tell them that he unravels the mystery

and finally investigates the relations of matter and spirit, they

author has established a code of refreshingly simple laws which, if they were only true, would leave nothing to be desired for metaphysics. It would be mere waste of space to go into further details as to the character of the book. Those who have any experience of the anthropological class of literature will at once recognise the species to which Mr. Wake's book belongs.

book like this, after one has dipped into a work like the

and with proper hygiene conditions would be rare visitants

gives in order a general sketch of cholera, diarrhœa, dysentery, and influenza. Throughout his book there is an utter absence

should. Written in good, bold, clear English, by a master not only of the natural sciences, but of the higher scientific departments of our profession, Dr. Austin's book is one which may be read with equal pleasure by the physician and the layman.

Medical Education and Medical Interests. By ISAAC ASHE, M.B. Dublin: Fannin. 1868.

This is the essay which received the Carmichael prize of £100 from the Council of the Irish College of Surgeons. It was, we suppose, crowned second to Dr. Macnother's. We by no means accept Dr. Ashe's opinions on the numerous points of medical abuse he has undertaken to discuss, nor have we space to enter seriously into the matter as to shew in what respect we consider Dr. Ashe's views mistaken ones. But we can nevertheless recommend this book as a worthy addition to the pamphlet branch to which it belongs, and as one which contains an abundance of useful and pleasant reading amongst professional matter. The following is a list of some of the questions in which the author treats:—Study of Languages and Sciences, Moral Discipline, Age for Commencing Medical Study, Hospital Undertaking, Systematic Lectures, Private Tuition, Professional Examinations, Qualifications of Examiners, Public Examinations of Corporations, "Physicians v. General Practitioners," The Physician's Fee, etc. On all these heads Dr. Ashe has something of interest to say.

On Digitalis; with some Observations on the Urine. By T. L. BRUNTON, B.Sc., M.B. London: Churchill, 1868.

This is an Edinburgh graduative thesis of more than ordinary merit. The author has taken up for discussion the important question of the action of digitalis, and while he has brought together from all sides a mass of information, which the general medical reader is unfamiliar with, he has given us some good results of his own experience. The author's researches have extended both to the physiological and therapeutical effects of the drug. His own hypothesis of the action is as follows:—It causes contraction of the small arteries, and at the same time acts on the regulating apparatus of the heart, both directly and to a much greater extent through the vagus thus causing dilatation of the heart with loss of tension; it then excites the musculo-motory apparatus, causing increased force of the cardiac contractions. This primary stimulus then gives place to paralysis—first partial and then complete. Dr. Brunton's introductory remarks on the physics of the circulation are not exactly what we should wish them to be: his explanation of tension, for instance, is far from having the necessary clearness. It seems to us, too, that in treating of the influence of the movements of respiration on the pulse, he has overlooked the very important investigation laid before the Royal Society of London last year by Dr. Burdon-Sanderson. Their sphygmographic tracings would be interesting if one felt sure of their accuracy. One is led to doubt this latter from the fact that the author records so many extraordinary variations in the tracings of his own pulse. If there is anything which those experienced in sphygmography insist on, it is that the pulse gives an almost unvarying trace if taken several times at the same hour of the day, and at the same interval of meals. Dr. Brunton's traces have not this quality. Still his book is a useful contribution to scientific therapeutics, and will be studied with benefit.

On Various Diseases of the Lower Extremities and the Allied Disorders, etc. By JOHN GAY, F.R.C.S. London: Churchill. 1868.

This book contains the Lettsomian Lectures delivered in 1867 before the Medical Society of London. Mr. Gay is a surgeon of considerable eminence, and his method of operation in femoral rupture has already been very favorably spoken of by Sir William Fergusson. In this work, which is illustrated by a number of interesting lithographs of dissections, he shows the great value [illegible] anatomy and physiology to the practical surgeon. [illegible] Anatomy and Physiology of the Saphenous System in relation to Varicose Veins, Morbid Anatomy, Seats of Obstruction, Currents in Varicose Veins, [illegible] of Varicose Disease, Treatment, Skin Disease, Discoloration, Induration, Ulcer and its Treatment. Under this latter head, which, after all, is of most importance to the practitioner, Mr. Gay treats of the methods employed by the [illegible] the present day. He [illegible] processes of bandages, elastic stockings, compresses, and obliteration, and shows [illegible] what [illegible] is advisable. We rather take exception to his statement that "[illegible] gives [illegible]," [illegible] new [illegible], &c. We [illegible] objective ones as any that the sensorium is capable of appreci[illegible] by incisions at the edges; the arterial ulcer he almost regards as incurable. Mr. Gay's book is a good practical contribution to [illegible]

Researches [illegible] Physiology and Pathology. By CHARLES MURCHISON, M.D., F.R.S. London: Longmans. 1868.

The extraordinary [illegible] to say a few words about the memoir above. The author, while [illegible] unnecessary [illegible] the effect that this substance has some peculiar power of sustaining the animal operations in the absence of food. He states also that, when taken in very large doses, it is a narcotic poison. He thus sums up its properties:—(1) In very large [illegible] of strychnia. (2) In much smaller doses it produces decided hyperæsthesia, dilatation of the pupils, and loss of movement from want of co-ordination. (3) In intermediate doses it diminishes, and then destroys, sensation, without influencing the movements in any marked degree. The preparation which the author recommends for those who wish to try experiments is a salt of the [illegible]

Clinical Lectures on Diseases of the Liver, Jaundice, and Abdominal Dropsy. By CHARLES MURCHISON, M.D., F.R.S. London: Longmans, 1868.

Dr. Murchison's long-expected [illegible] and we [illegible] The lectures were originally delivered to the students of Middlesex Hospital, and four of them have already been published in the *Lancet*. [illegible] treatment, etc., of hydatid tumours of the liver, which appeared in the *Edinburgh Medical Journal* for December, 1865. The [illegible], etc.; Enlargements of the Liver (Lectures II, III, IV, V, and VI); [illegible] Fluid in the Peritoneum. Hepatic Pain; Gall-stones; and Enlargement of Gall-bladder. Twenty-five very excellent engravings accompany the text, and records are furnished of [illegible] The subject-matter is as excellent as might have been expected [illegible] and we shall say no more on the general character of the book. [illegible] theoretical interest to which we may direct attention. It will be remembered that Dr. George Harley, in treating of jaundice, [illegible] of the common bile-duct, the biliary acids may be found in the [illegible] in the urine is a test to distinguish suppression from obstruction, and he then gives a slight modification of Pettenkofer's test. Now, Dr. Murchison's experience is quite opposed to this conclusion of Dr. G. Harley's. He says (p. 123) "that both the [illegible] We have not space for Dr. Murchison's arguments *contra*, but we [illegible] that on one occasion I applied the test to the urine of six patients under my care at the Middlesex Hospital. In three of the six cases a dark purple coloration was produced at the line of junction of the sulphuric acid and the urine. One of the three cases was an example of jaundice from impacted gall-stone; in the other two cases there was neither jaundice [illegible] two." Dr. Murchison's book is printed in fine bold type, and [illegible]

Topical Correspondence.

thous standard it may set up, it seeks to weigh the infinite in the balance of the finite, and shifts its ground to meet the every old error that science exposes. Thus pursued, natural man a share leading too often to disordered intellects and to Commons, where so many shams have lately been perpetrated.

satisfactory to find that

question, the view that the extension of cholera in towns is due to the contamination of the water-supply with the bowel-dis- law, that water into which the cholera dejections find their way, produces cases of cholera all over the district in which it is distributed for a certain period of time. It is a very significant London and Newcastle, on those days when the water-supply was stopped, the cholera immediately declined.

James Simpson's name from the list of Mr. Swinton's supporters. This fact will, I doubt not, have much influence in bringing new stands, the chances certainly lie in Mr. Swinton's side, and, unless Dr Playfair's friends exert themselves more vigorously, I fear he has received a large amount of medical support.

Edinburgh, and subsequently as Surgeon-in ordinary to His Royal Highness the Prince of Wales. It says that Dr. Clayton is a Fellow of the College of Surgeons (by election), a member of tivated successfully what is ordinarily known as general practice. made."

means of communicating Constitutional Syphilis," by Mr. H. Lee;

Now that the electors are approaching, a number of medical men are coming into the field as candidates. Foremost among those already up is Dr. Sandwith, C.B., of Kars, who was intro- few hisses at first, but towards the end of his speech he was listened to with attention, and when he had concluded he was loudly cheered. Sir Dominic Corrigan, who was asked to

ree with support from some of the most eminent medical men want long felt.

choice fell unanimously on Dr. William Russell, one of the evening lecturers at University College, and a pupil of Bunsen's. He is the discoverer of a very ingenious process for gas analysis, and is one of the Secretaries in the Chemical Section of the British Association. His published researches are both numerous and important.

Medical circles will remain very quiet between this and October, for most of our London physicians are "taking the air and the waters" in various parts of the world.

It is thought that the number of new students will be less this year than last. Time will tell.

I regret to have to record the death of Dr. W. Mackenzie, of Glasgow. Dr. Mackenzie's many works on the eye are held in esteem from one end of the world to the other. Everyone knows and appreciates them. He died at his residence at the ripe age of 74 years.

London, September 25th, 1868.

FEW who have had anything to do with hospitals believe that they are the most perfectly managed institutions in the world. The assistant-physician, who is so often taxed with using expensive medicines, who is provided with hardly any of the scientific appliances of modern medicine, and who has to prescribe for and examine about 150 patients in two or three hours, knows this better than any one. The public, however, are not so well informed. It looks, however, as though the day of reckoning had come, at least for the London hospitals. I say this because a pamphlet which has just been published, and which merely furnishes the statistics of expense, lays bare the sores of certain "charities," which have not dealt as well with their inmates as they ought to have done. Mr. Josh. G. Wilkinson, Secretary of St. Mary's Hospital, desiring to make some retrenchment in the heavy expenditure of his own hospital, wrote to the secretaries of the other metropolitan charities for their statistics. He arranged and tabulated these for comparison, and laid the result before the Board of Governors. The board ordered it to be reprinted, and it is now upon my table, and in the hands of most of our editors. It displays the most inexplicable differences between the sums expended for each patient by the different hospitals. Indeed, one hospital cures and feeds its patient at about half the rate that the others do. A few instances selected from Mr. Wilkinson's pamphlet will interest your readers. The following is the total expenditure of each hospital per annum, the number of beds being stated:—Charing-Cross, 200 beds, £9,778; Guy's, 700 beds, £29,925; King's College, 162 beds, £9,617; London, 516 beds, £29,987; Middlesex, 322 beds, £14,725; Bartholomew's, 660 beds, £33,664; St. George's, 355 beds, £16,001; St. Mary's, 157 beds, £9,861; University, 130 beds, £8,610; Westminster, 191 beds, £6,474. These are the figures for the general hospitals, and they exhibit some curious discrepancies. It is, however, when we come to the details that the most startling contrasts are observed; contrasts, too, which are all the more extraordinary when it is remembered that the total number of beds by no means represents the number really occupied. In the matter of drugs, the expenditure for the different hospitals is pretty nearly the same; but when we come to diet, there is quite another state of things. As Mr. Wilkinson says, we find some very startling results. "St. Mary's, with 141 beds occupied, expends £2,564 on the patients' food; while King's, with almost the same number, costs only £1,680, a variation of nearly £900 in this one article. Again, the provisions at Charing-Cross, with about three-fourths of the number of beds occupied at King's, cost £1,856, being £776 more than the larger hospital. A similar instance of economy in diet, Guy's stands peculiarly prominent, the patients in that hospital being fed at little more than half the cost of those at St. Bartholomew's, and at about one-third less than those at St. George's, St. Mary's, or Middlesex." Again, as to nursing, the returns are equally curious. Thus the nursing at King's is done for less than at St. George's and about half of that at Guy's, although the former contains more than twice, and the latter more than three times, the number of occupied beds. Westminster Hospital contains about the same number of occupied beds as King's, while the expense of nursing does not represent one-third of the amount. What does all this discrepancy indicate? To me it seems to be either that in some of the hospitals the patients are starved, or that in others they are overfed. Indeed, the Governors of the Westminster Hospital are so sorry that they have been misled on the point by the *British Medical Journal*, whose remarks have elicited replies from Drs. Fincham and Radcliff. These gentlemen allege that, though the diet-scale is very liberal, the patients always complain of it, and that a very small part of the provisions ordered for them is ever consumed. This clears up the question of feeding, but I fear there is no satisfactory reply to be made in reference to the nursing. There can be little doubt that nursing at this hospital is inefficient, a fact which accounts for the apparent economy in the expenditure. Altogether, I think Mr. Wilkinson is to be thanked for his exertions, and his impartiality must be admitted, since he taxes his own hospital with excessive outlay.

The annual report of the Poor-law Board has just been issued, and is, on the whole, very unsatisfactory. It admits that there has been some (!) negligence, but in great measure palliates it. It makes no adequate provision for the future management of the infirmaries. There was every reason to believe that the Board would have increased its number of medical inspectors; but it has not done so. So far from conferring this anticipated benefit on our profession, it has actually thrown more work on the shoulders of the already over-taxed medical officers. It now requires the medical officers to report on themselves, and gives them no additional pay for this extra, and very absurd, duty.

Old St. George's Hospital men will be glad to learn that the new school and addition to the hospital have been completed. The lecture theatre is entered through a corridor leading from the basement of the hospital and ornamented with busts of Cæsar, Hawkins, Brodie, Baillie, and Hunter. The lecture-room is capable of holding two hundred persons, and as there is no gallery, the students have to enter in front of the lecture-seat, a matter of some importance to the teacher who wishes to keep his class in order. There is also a smaller theatre for the chemical lecturer, the laboratory adjoins this, and both are connected with a shaft, which rapidly carries away the offensive gases formed in the course of lecture demonstration. The dissecting-room is large and well ventilated, with a demonstration-room at the end with a balcony after the fashion of the old St. Thomas's dissecting-room. The new museum is handsome and elegant in decoration, and there is a comfortable reading-room for the students. The opening address will be delivered by Dr. Acland on the 1st proximo.

A good deal of angry correspondence is going on in the medical journals in reference to the increase in the subscription to the Medical Club. It certainly looks as though the committee had treated the members somewhat ungenerously. When the club was started a couple of years ago by Dr. Lory Marsh—who, by the way, has just been made a justice of the peace—it was stated, in order to induce the profession to join at once, that the subscription for those joining within, up to a certain date, should be, for country members, a guinea, and for town members three guineas; and on the faith of this promise several members joined. It has quite recently been proposed to raise the subscription for the country members to three guineas, and for the town members to five guineas. Now this is manifestly unfair. It is idle to say that the old subscriptions are inadequate to the support of the club; a contract has been entered into, and I think it should be maintained. Whatever the ultimate issue, it is much to be regretted that the club has not been able to pay its way. I think there is much need of a club in London, and I believe such an institution, if properly worked, would do much to extend the *entente cordiale* of our now much-divided body.

A very strong feeling exists here that some tangible reward should be offered to the Indian medical officers who laboured so well and so faithfully in the Abyssinian war. It is not of course to be expected that pensions can be made; but, as the *Lancet* says, there are ways in which officers may be rewarded besides promotion.

An important reorganisation of services has just been made. Deputy Inspector-General of Hospitals Thomas Longmore, C.B., has been gazetted to be Honorary Surgeon to Her Majesty. Those of your readers—and they are many—who have studied at Netley, can judge how worthily the Professor of Surgery discharges his duties, and how well he deserves the high honour that has been conferred upon him.

Is there such a disease as hydrophobia? This is really a serious question, and it is generally asked by Mr. Holmes Coote in a letter to the *Times*. He says that, during thirty-five years at St. Bartholomew's, he saw only two cases, and these he believes to have been modified forms of tetanus. In one of these, far from the patient having any horror for water, he was greatly relieved by sucking ice. Mr. Coote seems disposed to deny that the so-called cases of hydrophobia are caused by the absorption of a poison. He looks on the affection as a sort of traumatic tetanus. In the face of our present absurd and stringent police regulations for dogs, this expression of opinion is important.

Cantharoid ... ... 9 ,,
Water ... ... 100 ,,

What is Electric Resorption?—When a galvanic current

Faraday to distinguish the decomposition of substances effected by electricity from decomposition effected by analysis. "But,"

element of ordinary size. How long will it take to completely

at the effect of the electric current is to give the particles

Journal of the Medical Sciences for July contains an article by author, besides giving a valuable carbolic acid has been applied

ous action of carbolic acid. The following experiment is an illustration of all:—A mouse was procured and put into a wide-mouthed four-quart bottle. A piece of sponge saturated bottle and suspended about two inches from the bottom. Five if intoxicated; the movements continuing for fifteen when a short respite occurred. These paroxysms the animal became violently convulsed, the spasmodic action lasting thirty minutes, when it died. Upon examination it

power of

Progress of the Physical and Collateral Sciences

[illegible] the vessels [illegible]. The lungs were of a light pink [illegible] the [illegible] lamina [illegible]. they were [illegible] heart appeared [illegible] and left [illegible], and upon [illegible] with very dark clots, which [illegible] the muscle was [illegible].

Vegetable Organisms in the Blood.—In [illegible] Dr. [illegible] Sanitary [illegible] between vegetable germs and disease, some very instructive and remarkable experimental observations have been quite recently published by another American physician, Dr. Joseph G. Richardson. The following record is so unique that we give it in Dr. Richardson's [illegible] January 7th, 1868. [illegible] and [illegible], I [illegible] which [illegible] been standing some seventy hours on some fragments of beef, and which, [illegible] 27,000,000,000 living organisms. As this test was intended to [illegible] as possible, [illegible] I prepared a slide and cover in the following manner: after washing them [illegible] carbolic [illegible] I [illegible] drop [illegible] the middle of the slide and laid upon it the glass cover, taking care that by suitable pressure the acid was evenly distributed between the surfaces. Raising the cover after about a minute, I held it by means of forceps in the flame of a spirit lamp, until all the acid was volatilized, and then placed it carefully under a small bell-glass. The slide itself was similarly treated, and when both were quite cool, a drop of blood (obtained from an incision made through integument painted with tinct. ferri chlor.) was touched to the slide, which was quickly transferred beneath the [illegible] and placed on the microscope stage. The lenses being adjusted, I found the blood remarkably full of moving particles, precisely resembling to my eye specimens of vibris facillus; these were so abundant, that I counted twelve in as many minutes, and at one turn three were visible in the same field. At a quarter before nine, another drop of blood from a new incision was examined under similar conditions, but four vegetable bodies were found, and later still they diminished in number."

Carbolate of Quinia.—A peculiar preparation which can hardly be honored with the name of chemical compound, has [illegible] by Herr Wenzel, of Berlin, and is highly spoken of by Herr Wenzel, as combining the useful qualities of both quinia and carbolic acid. It is especially recommended in all cases of zymotic disease, and is said to have been used with advantage in cases of rinderpest during the time that disease was prevalent in England. It seems that with bases even of a weak character like quinia, carbolic acid loses many of its irritating qualities. "Pills containing a grain of quinia and $\frac{1}{10}$th of a grain of carbolic acid, were given in puerperal disease without the slightest inconvenience, and with much advantage. This preparation is made by dissolving sixty parts of carbolic acid with hundred parts of quinia in three hundred parts of highly rectified spirit, filtering, distilling, and evaporating to the consistence of [illegible] cooling, [illegible] powder, [illegible] crystals.

The Existence of Arterial Capillaries in Insects.—In a memoir lately presented to the French Academy, M. Jules Künckel reverts to M. Blanchard's discovery of the peculiar [illegible] while he was engaged on some enquiries into the development [illegible] net-work of capillary vessels, which, he says, not only ramify among the muscles, but are distributed to the various organs of the body. The blood is easily recognised by its rosy tint. But the difficulties of making the preparation to observe the capillaries are, says M. Künckel, extremely great, and you must take a living insect, open it while alive, lift up a bundle of muscles, transfer it *immediately* to the stage of the microscope, and examine it [illegible] delay. A [illegible] power is [illegible] M. Hartnack's immersion-lenses. The formation of the capillaries is curious. Their coats are formed of the outer tunic of the [illegible] their outer coats are continued on to form the capillary tubes.

Use of Galv[illegible]. [illegible] Medical Record, [illegible] to the spine. This is the old story. How are we ever to found [illegible]

A new application of Collodion. It is well known to those who have to employ the collodion treatment, that the part treated becomes excessively sore. This is not due to the application of the white hot point, for this completely destroys the tissues and prevents all pain. But the bulk of the instrument which [illegible] the point at a [illegible] the [illegible] and [illegible] [illegible] [illegible] [illegible] cessful. But another method, which is simpler and nicer, is [illegible] by M. [illegible] in the *Journal de Chimie Médicale* for August. He says, coat the part well with a layer of collodion and let this dry. There is thus a cellulose cover over all the skin but the part to be destroyed. This is a better non-[illegible]

Collodion Inoculation.—What is [illegible] The [illegible] writer stated that hydrophobia is unknown in Spain. The reason of this was, that the bite of the snake inoculated the individual bitten with some substance which rendered him proof against the poison of hydrophobia. Indeed, said he, the peasants are so well aware of this, that they often submit their [illegible] bitten by snakes. This [illegible] with few believers, and it has now received flat denial from M. [illegible] in Spain, a [illegible] of the Imperial Academy of Medicine, [illegible] the Spanish Academy, [illegible] that the story was [illegible] that indeed hydrophobia was common enough in Spain, for they had [illegible] not only [illegible] but [illegible]

Conium in the Treatment of Chorea.—In a very valuable [illegible] Dr. [illegible], who is our best authority on the physiological action of conium, [illegible] [illegible] [illegible] [illegible]

Fatty matter	...	4·5
[illegible]	...	...2
Sugar of milk	...	4·71
Ash	...	0·73
Water	...	87·19

What is Mycoderma?—Wherever fermentation is described, [illegible] which has been since distinctly denied by M. Pouchet, the advocate of spontaneous generation.

[illegible] the time which has elapsed since the change commenced.

[illegible] at the Medical College of Washington,

[illegible] badly borne by a large proportion of persons than other similar [illegible] physicians will continue to use it thus without acquiring a great [illegible]

Milk [illegible] Point of View. [illegible] for chemistry:—The organic material to be tested is extracted with ether or chloroform; the extract mixed on a watch-glass with two or three drops of pure aniline, and evaporated on [illegible] coloration appears, which changes to dark green on dilution with water. By this process as small a portion of nitro- [illegible]

Artificial Incubation of the Viscera. [illegible] trivance. The embryo, says M. Dareste, is in the commence- [illegible] of its development that it deviates from this arrangement, [illegible] clearly that these abnormal deviations result from the left region of the vascular area being more developed than the right. If then, says he, experiment can bring about this increased development, we can produce inversion artificially. [illegible] the chick. Those who like to try the experiment for them- [illegible] the eggs so that their long axis is placed obliquely situate in relation to the axis of the tubes of the artificial incubating machine, and let the pointed end of the egg be always higher than the round one.

Application of Mineral Substances to the Nostril.—In an [illegible] nasal method of introducing drugs in case of facial neuralgia. M. [illegible] of the medicinal snuff till relief was produced.

The Common Origin of the Parasitic Fungi.—Professor [illegible] very startling conclusions: (1) Penicillium glaucum is met [illegible] *albicans* is in all the cavities of the body which contain [illegible] instance, as the hair. These are very remarkable facts, and should be carefully inquired into by those who love to establish [illegible]

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

(Continued.)

BY J. FAYRER, M.D.,
Professor of Surgery, Medical College of Bengal.

PRESENT: Dr. Fayrer and Mr. Sceva.

EXPERIMENT No. 1.

15th October.—A fish (Ophiocephalus Marulius), about ten inches in length, was bitten by a fresh Cobra, at 11-20 a.m., in two places, on the dorsal and ventral surfaces.

11-22. The fish turned over on its side in the water.

11-23.—Struggling and plunging violently in the water.

11-25.—Turned over on its side.

11-26.—On being roused, plunges violently.

11-40.—Dead.

Bitten at 11-20.

Died at 11-40. Dead in 20 minutes.

EXPERIMENT No. 2.

A large snail (Achatina Fulica) was bitten at 11-28 by a Cobra; it immediately withdrew itself within its shell.

11-45.—In order to examine its condition, the shell was broken; it still continued to contract.

12.—No contraction; all irritability seems extinct. Dead.

EXPERIMENT No. 3.

Two snails of equal size (shells previously broken); one was bitten by a Cobra at 12-28. It immediately shrank and contracted itself. The other snail was not bitten, and was kept for comparison.

12-40.—Irritability of the bitten snail much diminished.

The bitten snail seemed to lose its vitality much sooner than the uninjured one; but the precise time when irritability ceased was not noted.

These were the only invertebrate animals I could procure on this occasion. The experiments, though not very satisfactory, leave no doubt that the moluse was affected by the poison.

EXPERIMENT No. 4.

A full-grown Cobra was bitten at 11-40 a.m. in two places near the tail by a Daboia Russelli.

11-48.—No effect.

12-50.—No effect.

16th October, 8 *p.m.*—The snake was perhaps not so lively, but there was no marked effect, and it lived.

EXPERIMENT No. 5.

A full-grown Cobra was bitten in two places, on the ventral surface and the middle of the body, by a Daboia, at 11-58.

12-50.—No effect.

16th October, 8 *p.m.*—No effect; the snake lived.

EXPERIMENT No. 6.

A half-grown chicken was bitten by a fresh Cobra in the thigh at 12-2.

12-3-45. It crouched: head drooping, beak resting on the ground.

12-4-30.—Paralysed; head lying on the ground.

12-5.—Convulsed.

12-5-10.—Dead, in 3 minutes and 10 seconds.

EXPERIMENT No. 7.

A second chicken was bitten by the same Cobra at 12-9-30 in the thigh.

At 12-10.—Leg partially paralysed.

12-13.—Lying down, beak resting on the ground.

12-13-30.—Paralysed, beak resting its point on the ground.

12-14.— Convulsed; dead in 5 minutes and 30 seconds.

EXPERIMENT No. 8.

A third chicken was bitten by the same Cobra in the thigh at 12-17-30.

At 12-18-30.—Fell over; rested the point of its beak on the ground.

12-19.—Convulsed.

12-21.—Dead, in 4 minutes and 30 seconds.

This chicken was rather smaller than the two preceding ones.

These three experiments shew that the snake had lost but little of its power in three efforts. The Cobra used in these experiments was not full-grown, but it was very active and vicious.

EXPERIMENT No. 9.

The above small Cobra was bitten at 12-35 in two places, on the middle of its body and on the ventral surface, by a large and fresh Cobra.

16th October, 8 *p.m.*—Not affected; it lived.

EXPERIMENT No. 10.

19th October, 11-40 *a.m.*—A large Dhamin (Ptyas Mucosus) was bitten in two places by a Daboia.

11-47.—Is partially paralysed; the mouth is wide open; appears unable to move; respiration continues.

11-47.—Moving about slowly.

11-52.—Appears to be recovering.

12.—More active.

20th October, 6 *a.m.*—Appears sluggish.

10 *a.m.*—On being roused, moves slowly; but is weak and stiff.

Recovered subsequently.

October 26th, 12-47-1.—Bitten again by another Daboia.

1 *p.m.*—No effect.

Became sluggish, and died at 10-10 p.m., 27th October.

PRESENT: Dr. Fayrer and Mr. Sceva.

26th October.—The following experiments were made with the view of again carefully examining the blood before and after the snake-bite.

The blood was very carefully examined on three occasions—

1*st*, before the animal was bitten.

2*nd*, whilst it was under the influence of the poison.

3*rd*, after death.

In no case was anything found to support Professor Halford's theory, or to confirm his observations. There was no appearance of any new corpuscle, nor was there any change of importance in the condition of either the red or white globules of the blood.

My impressions were in favour of the theory advocated by Professor Halford, and if any bias existed, it was certainly for rather than against the explanation he gives of the pathological changes in the blood. Nothing, however, that I have seen after many observations supports the view in question; and I am constrained to believe that the change in the blood is of a much more subtle character than can be detected by the microscope. Moreover, in rapid death, as for example where it occurs in from 30 to 40 seconds, it is impossible that such developmental changes could have taken place. The cause of death is evidently an impression made on the nerve centres through the medium of the circulation; but it is, I think, evident also that it is one of a dynamical nature, and not immediately dependent on any structural changes that may, if any do, occur in the blood, and can be seen with the microscope. When death is protracted,

[illegible]

[illegible] No. 11.

A [illegible] dog [illegible] by a [illegible] at 11-5 p.m.

[illegible]

[illegible]

[illegible]

Coast of Coromandel. Their bite is dangerous, but the fang is so short that the wound inflicted is superficial. They are shy and attempt to escape, but defend themselves fiercely when attacked, says Gunther; they he coiled up, and, when irritated, dart in a peculiar manner sideways, uncoiling themselves as though with a spring. This is the largest species of the genus Bungarus; it attains to a length of five feet or more. It has a wide range—Java, the Malayan Peninsula, Burmah, China, Bengal, and the Coromandel Coast. There are several species:

1. Bungarus Fasciatus (synonyms).
   Pseudoboa Fasciata
   Bungarus Amularis (Bengalee Sankni).
2. Bungarus Caeruleus (synonym).
   Pseudoboa Candidus
   Boa Krait*
   „ Lineata
   Bungarus Lividus
   „ Candidus
   „ Arcuatus
   „ Lineatus
3. Bungarus Ceylonicus
4. „ Semifasciatus

and other species of the same genus; but they are not found in the peninsula of India, I believe.

EXPERIMENT No. 18.

A Bungarus Fasciatus was severely bitten three times, about 8 inches from the head, by a powerful and fresh Cobra, at 1-55 p.m.

No apparent effect was produced either at the time, soon after, or later. The Bungarus was alive and well two days later. It died a day or two after, but its thorax and lungs were found filled with blood. The Cobra fang had probably penetrated the lung.

EXPERIMENT No. 19.

A Dabcia was severely bitten by a fresh Cobra in three or four places at 2-10 p.m.

No present or subsequent effect was produced. The snake remained quite well.

EXPERIMENT No. 20.

Another Dabcia was severely bitten by a fresh Cobra about a foot from the tail at 2-22 p.m. No effect produced. The snake remained perfectly well.

EXPERIMENT No. 21.

Two fresh and vigorous Cobras were made to bite each other in several places at 2-35 to 2-37 p.m. No evil result followed; both remained quite well.

The result of these experiments has been to demonstrate that the invertebrata and hæmatocryal vertebrata are, like the hæmatothermal vertebrata, subject to the deadly influence of snake poison. The non-venomous snakes, and innocuous colubrine snakes rapidly succumb when bitten by either the viper or the elapidæ.

The weight of evidence, however, tends to shew that the poisonous snakes have little, if any, power to injure each other, for the most of those that survived experiments was the bite of a vertebrate snake fatal to any other venomous snake. The Bungarus that died after being bitten by a Cobra, probably died from internal hæmorrhage, and not from the poison.

In repeated careful microscopical examinations of the blood of animals before they were bitten, during the action of the poison, and after death, I failed to detect any structural changes, such as are described by Professor Halford.

I may here note, in anticipation of future experiments on the efficacy of the so-called antidotes, that the application of a ligature to the thigh of a fowl bitten by a Cobra manifestly retarded the entry of the poison into the circulation, and were cord for a time its fatal effects.

I hope ere long to commence a series of experiments for the purpose of testing the value of various remedies, antidotes, prophylactics, &c., proposed from a variety of sources for snake-poisoning. This will be the natural sequel to the experiments that have been hitherto made with a view of investigating the effect of the poison on the living body and the pathological changes produced.

ON CHOLERA.

BY C. MACNAMARA,
Surgeon to the Calcutta Ophthalmic Hospital.

(*Continued from Vol. III. page 249.*)

In the early part of 1840, the Government of India despatched a combined European and Native expedition to China; these troops had hardly landed on the island of Chusan before cholera broke out among them. There were only twenty cases, it is true, out of a force of some 1,500 men, nevertheless, as the troops had been absolutely free from the disease before starting from India, and on the passage to China, we may fairly conclude that they contracted cholera on arriving in that country.

I have before referred to the existence of cholera in China in 1820. M. Huc informs us that the disease was unknown to the Chinese prior to that year; they believe that it first appeared on the shores of the Yellow Sea as a mist which gradually rose from the water, "winding its course along the hills and valleys, and, wherever it passed, men found themselves suddenly attacked with a frightful disease, which was incontestably the cholera.* It ravaged first the province of Chan-tung, then turned northward to Pekin, striking in its march the most populous towns; it then crossed the Great Wall. It is possible," continues M. Huc, "that it followed the route of the caravans as far as the Russian station of Kheaktha, and afterwards, passing through Siberia, invaded Russia."

It is evident, therefore, that epidemic cholera was by no means a new phenomenon in China; and from the following history I think it probable that an outburst of the disease occurred there in 1841-42, which we may trace into Burmah, and even venture to assume followed the route indicated by M. Huc, or perhaps a more southern one, into Central Asia and Persia in 1844-45, there uniting with a vast wave of cholera from India, and spreading over Europe and America, as it had done in 1832-33. We must, however, proceed to examine the data upon which this idea is formed.

In 1841 Dr. J. French reported to the Medical Board that cholera, in an aggravated form, had broken out among the Bengal troops at Ningpo. "In August the disease was even of a more malignant form at Chinhai. Of nine men seized with it no less than six died." Dr. Bryson makes almost precisely the same remark as to the health of the fleet in these seas. He says cholera "seems to have prevailed in its most malignant form at Chinhai and Ningpo. Out of a party of marines serving on shore with the force, ten were attacked and six died."† During the year 1842, 163 cases of cholera and 45 deaths occurred in our fleet; in 1843, there were 131 cases and 35 deaths from [illegible]. Dr. Bryson observes:—"On several occasions [illegible] the [illegible] reports from the expedition [illegible] that

* Huc's Travels in the Chinese Empire, by M. Huc. Vol. II. p. 24.

† Bryson's Statistical Sketch, Part II. East India Statistics, p. 33. Printed by order of the House of Commons, 1851.

* Dabcia is the Krait of Bengal. I have not yet succeeded in [illegible]; a Bungarus caeruleus. It is found in Bengal, Southern India, and in Assam, but not in Ceylon.

[illegible] to Wuchang [illegible] Ningpo, [illegible] Chusan, [illegible] Amoy [illegible] Formosa, [illegible] Hainan [illegible] Hong Kong [illegible] Macao [illegible] Canton

was [illegible] at Lucknow in July, several of the royal family [illegible]

[illegible] was the whole of the districts above [illegible] Assam, and Cachar, in Sept[illegible] [illegible] [illegible] convicts confined in the various jails amounted to rather more than [illegible] during the year 1841, and [illegible] [illegible] 800 deaths [illegible] cholera; [illegible] [illegible] only 23 deaths occurred from the disease throughout the twelve months. In fact, the inhabitants of this presidency to the west [illegible] were [illegible] the exception of the slight outbreak in [illegible]

[illegible] in the Chybassa, Dacca, Poorce, and Calcutta divisions, and, in [illegible] there were no fewer than 93 cases among the European troops in [illegible] various fleets of boats proceeding down the Ganges. A remarkable instance of this kind, which, however, occurred later in the year, is recorded of H.M.'s 9th Lancers. Cholera was very prevalent among the villages about Monghyr, and no sooner had the left wing of the regiment arrived in this locality than [illegible] "A few days later they emerged from the infected districts, and at the same time the disease left them." About a month afterwards, the men of the right wing, on their journey down the river, were affected with [illegible] pushing rapidly on, they lost it where the first division got [illegible]

To the west of Cawnpore, although the season was a remarkably unhealthy one, there is no evidence of an outbreak of cholera among its inhabitants, as we might have expected from the great prevalence of the disease to the east during the [illegible]

Throughout the following twelve months we have again details of epidemic cholera in Bengal, and as far west as Ghazeepore, where H.M.'s 29th Regiment, just arrived from Europe, suffered very severely.

"In July, 1843, the disease became fearfully epidemic at Agra. It [illegible] for upwards of two months prior to its assailing the prisoners, European and Native troops, which, however, it did simultaneously in August, though in very opposite degrees. H.M.'s 39th Regiment and European Artillery suffered awfully, whereas the four native corps and camp-followers suffered comparatively very slightly. The European barracks, and the lines of the sepoys, as well as the bazars, are in juxtaposition, and situated on an extensive open clear plain, elevated many feet above the level of the river; the soil is a sandy argillaceous composition. The season was marked by [illegible] with deluges of rain; upwards of 24 inches fell in July and August, accompanied by great and sudden transitions of temperature." One hundred and [illegible] in the Agra jail. The disease was very prevalent throughout the Muttra and Allyghur districts, extending west as far as Boolundshahur, but not reaching Delhi. At Bareilly "cholera broke out with some degree of violence,"† and the same remark applies to Moradabad. Among our European troops in the Meerut division there was only one death from cholera throughout the year, and in the native force but two cases. Not a single [illegible]

attending the Delhi dispenary during the second half of 1843. It is clear, therefore, that the invading cholera of this year failed to pass beyond a line to the north-west corresponding to about longitude 77° 56". To the south-west of this Presidency, however, it broke out in May in the Odeypore territory, and still earlier in the year to the north-west of this state.*

In 1844 cholera was confined to its endemic area in Bengal, and even there appeared only in certain localities. The following table serves to illustrate this point, and is of interest with reference to the history of the disease during the succeeding [illegible]

Names of stations.	Average strength of European troops during the year 1843.	Number of deaths from cholera among European troops during 1844
[illegible]	1,369	45
[illegible]	1,855	5
[illegible]	1,234	29
[illegible]	735	30
Cawnpore	2,055	1
Agra	1,333	...
Muttra	192	...
Gwalior	75	...
Meerut	2,092	1
[illegible]	116	...
Kussowlie	1,435	3
[illegible]	943	...
Loodiana	1,605	...
[illegible]	195	1
Sukkur	1,036	...
[illegible]	970	...

Towards the close of 1844 the Medical Board addressed the Government of India concerning a reported outbreak of the plague in Cabul, and in reply they received the following communication from Major Broadfoot, the Governor-General's Agent in the North-Western Frontier.—"In answer to your letter of the 16th December, I have the honor to inform you that the disorder at Cabul, called 'plague' in the newspapers, has advanced steadily from Bokhara to Peshawur, where, since the winter has set in, its violence seems to have decreased, as well as its progress to be suspended, though it still exists in the Eusufzye country. The symptoms of the disease at Cabul and Peshawur are described as similar, and they appear to me to be those of cholera rather than that of plague. They are violent vomiting and purging, ending in death in a few hours, when the disorder is violent; all witnesses concur in this description of it, and it was similarly described to me a few days ago by an huzara of Cabul, who had the disease there and recovered. He had served under me in Afghanistan, and I think his description was probably correct; it was precisely that of virulent cholera described by an unprofessional observer. As to precautions, I think it impossible to provide any which would be efficient on so extensive a frontier, the entrances into which are numerous, and not in our keeping." This letter contains the first official announcement I have seen of the cholera which committed such terrible havoc in Central Asia and Afghanistan in 1844. Dr. F. S. Arnott (at present the Inspector-General of the Bombay Medical Service) informs us, "about the end of the hot season of 1844, the countries north of the Hindoo Koosh were devastated by

* [illegible]

† [illegible] 1843. [illegible] By [illegible] [illegible] cases [illegible]

* [illegible] the Bengal Corps, [illegible] [illegible] the [illegible] Medical Service, [illegible] XII, [illegible]

April 1845 it spread to Hoosuni, Abdaul, and Jhelum, destroying 500 men of General Court's regiment at the former place. [illegible] have carried off 22,000 people. In June, having showed itself at Umritsur, it crossed the Sutledge, and broke out at Ferozepore, and afterwards at Loodianah, continuing its course towards Central India. It here sent off a ramification down the Sutledge and Indus to Sukkur, which place it reached on the [illegible]. It, however, continued its course down the river, and broke out at Hyderabad about the middle of July, and afterwards proceeded onwards to Tatta and Kurrachee; but by the time it reached the latter place it had abated much of its violence."*

This description of the course taken by the cholera of 1845 exactly coincides with that of the Governor-General's Agent on the North-Western Frontier, and, as I shall presently show, with the information contained in the proceedings of the Medical Board regarding the Bengal troops in these localities. Moreover, as Dr. Arnott is still in Bombay, I wrote to him, and he has most kindly furnished me with all the information I required on the subject; and, having been in Sind with his regiment in 1844-45, he was, as he states, at the time most anxiously watching the progress of this terrible epidemic.

Dr. Arnott's evidence, in fact, regarding this important epoch in the history of Indian cholera is precisely of the description upon which we naturally place so much value. He was an independent eye-witness of the events he describes.

Ferozepore was the furthest point to the north-west occupied by British troops (Bengal) in 1845; and from the proceedings of the Medical Board, I find that early in June 36 cases and 19 deaths from cholera occurred among our troops stationed there; at the same time, instances of the disease were reported from Loodiana and Sukkur. Early in July it broke out with terrible violence among H.M.'s 31st Regiment at Umballa. In this and the following months there were no less than 339 cases and 187 deaths from cholera in this regiment; and in the Sirhind division alone, within the three months (June, July, and August) 365 Europeans fell victims to this terrible disease, exceeding in number those killed in England's toughest battle in India—Sobraon, which was fought in the following February.

[illegible] in 1845, and happens now to fill a post in an hospital under my charge, has given me some particulars of this outbreak of cholera, which I repeat in his own words. "The month of July set [illegible] then the sun came out very strong, at which time the cholera broke out (about the 7th), and so great was the mortality that after three days no coffins could be procured, so the men were sewed up in their bedding and buried as on the battle-field. We were [illegible] as the men got under arms, the rain poured down, and we were all drenched with rain. The walls of the tents were blown in, the bedding soaked, and, I am sorry to say, that during that [illegible] but the men bore it like soldiers." The sergeant informs me [illegible] and, like all Irishmen, he had the baby baptized after the eighth gallon and a half of rum from the canteen; there were twelve persons present, including the man and his wife, and by the following evening all of them were in their graves, except the baby, and the poor orphan was taken by a daughter of Mrs. Ball, now in Calcutta."

In August, 1845, cholera advanced eastward to Meerut, where, during the month, there were 29 cases and 9 deaths among the European troops; in September there were 114 cases and 76 deaths from cholera. In October and November the disease was severely felt in the Delhi jail; whereas, at Agra, there was not a single death from cholera among the prisoners or native troops in August or November, and only one casualty from this disease in October.

I have already quoted from Dr. Arnott's paper as to the existence of cholera in Sind, and, before leaving the subject, may add Dr. K. K. Kirk's evidence on the subject. He writes, "during the hot weather of 1845, cholera visited Sukkur and many other parts of Sind with much severity. In the cantonment bazaar as many as 30 or 40 people were dying daily for some time. The disease was of a most severe kind, consisting only of a direct collapse, without spasmodic pains in the limbs, and the passive flow of the vital fluids from the skin and bowels. The attack was as insidious as it was dangerous, and some patients I saw presented no symptoms to excite alarm even in themselves, but lay in that quiet state which would have followed the withdrawal of their blood in small successive portions; inflammation of the brain, with slight accompanying fever, carried off many who had successfully wrestled with cholera."*

From a careful study of these facts, I can arrive at no other conclusion than that the cholera of the Punjab and North-west of 1845, was a continuation of the Central Asia epidemic of 1844. I have shown that an outburst of the disease took place in China in 1841-42-43, that it appeared in the north of Burmah [illegible] in 1843; and supposing it to have continued its course to the north of the Himalaya at about the same rate as we have seen it frequently travel in India, it would account for the outbreak of the disease in Bokhara in 1844, which, in like manner, thrust its branches down into Afghanistan and northern India; at the same time continuing its growth to the west, and appearing in the north-east of Persia, at Mushed, towards the close of 1845.

I must not omit to notice the fact that, while cholera was spreading from the Punjab eastward to Delhi, and down the Indus to Sukkur, appearing also at Kurrachee, it was again fearfully prevalent in many parts of Bengal. In April, we hear of its ravages in Manbhoom, Furreedpore, Purneah, Tirhoot, and other districts. At the same time it "raged fearfully at Allahabad." On the 20th of June, Dr. Darby reports from Cawnpore, "that during the last four days the station has been visited by that dreadful scourge cholera in its most malignant form;" and subsequently he writes that out of a force of some 2,212 Europeans, 94 cases and 46 deaths from cholera had occurred; whereas among 16,000 native troops, there had only been 10 deaths from this disease. "The epidemic only raged for a few days and then absolutely and entirely disappeared." Had we not, therefore, evidence to the contrary, we might have supposed the cholera I have described as appearing in the Punjab had spread, as we have invariably found it do heretofore, from Bengal; but the fact of the Agra division not having been affected in 1845, and of the steady advance of the disease from Peshawur to Delhi, leaves us in no doubt on this point. These facts demand our most careful consideration, for there is hardly a single circumstance connected with the history of the disease which bears more directly on its etiology than its progress in 1843-44-45.

* [illegible]

SUMMARY OF FIFTY *POST-MORTEM* EXAMINATIONS OF INHABITANTS OF THE JESSORE DISTRICT, PERFORMED IN THE JAIL HOSPITAL.

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(Continued from Vol. III, page 206.)

II.—AGE, SEX, CASTE, EMPLOYMENT, PERIOD OF IMPRISONMENT, AND CAUSE OF DEATH.

These several circumstances are set forth in Table No. II. the number prefixed to each instance being the same in series as in Table No. I. As the induction is so limited, I have not attempted any analysis or generalization, merely placing the facts on record, in order that they may serve as data of comparison with any other similar series which may be contributed, in future, by myself or others. The statement of age is merely approximative, as few grown-up natives of the lower class have any idea of what their age actually is.

TABLE No. II.

No.	Sex.	Age.	Caste.	Employment.	Period of Imprisonment. Years.	Months.	Days.	Diseases Causing Death. Primary.	Secondary.
1	Male.	65	Mussulman	Cultivator	1	..	..	Chronic dysentery	Intussusception.
2	,,	55	Hindoo	Ditto	2	..	24	Ditto	Asthenia.
3	,,	60	Ditto	Ditto	2	5	29	Ditto	Ditto.
4	,,	72	Ditto	Ditto	..	..	1	Bright's disease	Diarrhœa.
5	,,	52	Brahmin	Priest	2	10	8	Tetanus	Asphyxia.
6	,,	30	Mussulman	Cultivator	..	3	3	Acute dysentery	Asthenia.
7	,,	40	Ditto	Ditto	6	7	3	Laryngitis	Œdema glottidis.
8	,,	45	Hindoo	Ditto	..	1	8	Rupture of spleen	Peritonitis.
9	,,	35	Mussulman	Ditto	..	..	12	Phthisis	Pleuritis.
10	,,	45	Chamar	Ditto	..	2	24	Pneumonia	..
11	,,	25	Hindoo	Ditto	6	4	..	Chronic dysentery	Pneumonia.
12	,,	55	Mussulman	Ditto	..	8	6	Ditto	Ditto.
13	,,	55	Ditto	Ditto	..	2	10	Dysentery	Ditto.
14	,,	40	Ditto	Ditto	..	1	5	Pneumonia	..
15	,,	37	Ditto	Ditto	1	..	..	Splenic enlargement	Fever and debility.
16	,,	40	Sutri	Service	..	8	14	Dysentery, acute	Emaciation and œdema.
17	,,	38	Mussulman	Cultivator	1	3	..	Feb. int. quot.	Congestion of brain & lungs.
18	,,	32	Kayat	Writer	4	10	8	Phthisis	..
19	,,	75	Hindoo	Cultivator	..	1	6	Chronic bronchitis	Emphysema.
20	,,	38	Mussulman	Chaprassee	..	9	..	Cholera	..
21	,,	34	Kayat	Service	..	3	..	Abscess of liver	Pneumonia.
22	,,	49	Hindoo	Ditto	..	11	..	Splenic enlargement	Ditto.
23	,,	41	Ditto	Cultivator	..	6	22	Fever, remittent	Congestion of brain.
24	,,	45	Chamar	Ditto	2	11	6	Dysentery	..
25	,,	27	Mussulman	Ditto	..	10	11	Splenic enlargement and dysentery	Pneumonia.
26	,,	65	Ditto	Ditto	..	9	7	Dysentery, chronic	..
27	,,	35	Ditto	Ditto	..	1	27	Splenic enlargement	Pneumonia.
28	,,	28	Ditto	Ditto	..	10	1	Ditto	Pleuritis.
29	,,	70	Hindoo	Ditto	5	3	4	Pneumonia	..
30	,,	57	Mussulman	Ditto	..	3	23	Feb. int. quot.	Cerebral congestion and exhaustion.
31	,,	22	Hindoo	Writer	..	5	15	Phthisis pulmonalis	Pneumonia.
32	,,	20	Mussulman	Cultivator	2	9	17	Splenic enlargement	Asthenia.
33	,,	45	Ditto	Ditto	..	4	13	Ditto	Ditto.
34	,,	45	Hindoo	Writer	..	5	20	Lepra	Tubercular peritonitis.
35	,,	40	Chamar	Mochi	1	7	..	Dysentery	..
36	,,	45	Mussulman	Cultivator	1	3	19	Cholera	..
37	,,	25	Kayat	Service	..	3	7	Splenic enlargement	Pneumonia.
38	,,	20	Mussulman	Cultivator	..	5	13	Acute dysentery	Ditto.
39	,,	35	Ditto	Ditto	..	1	2	Dysentery	Ditto.
40	,,	75	Ditto	Ditto	..	..	17	Pneumonia	..
41	,,	23	Ditto	Ditto	..	8	5	Splenic enlargement	Anasarca and asthenia.
42	,,	66	Brahmin	Priest	..	1	9	Feb. int. quot.	Exhaustion.
43	,,	17	Mussulman	Cultivator	..	1	12	Fever; enlarged spleen	Dysentery.
44	,,	45	Ditto	Ditto	..	7	..	Fever, remittent	..
45	,,	50	Ditto	Ditto	..	5	20	Ditto	..
46	,,	27	Chamar	Ditto	..	4	6	Chronic dysentery	Fever, remittent.
47	,,	32	Brahmin	Service	..	7	22	Secondary syphilis	Ulceration of trachœa.
48	,,	32	Hindoo	Cultivator	2	11	4	Splenic enlargement	Pneumonia.
49	,,	75	Mussulman	Ditto	..	4	2	Phthisis	..
50	,,	37	Hindoo	Ditto	..	4	3	Pleuritis	..

III.—PATHOLOGICAL CONDITION OF THE ORGANS.

1. The *bodily condition* of the subjects examined is noted as follows:—

Nine bodies (*a*) (18 per cent.) were noted "well nourished." The average body weight of these was 45s. 1ch.

Thirteen bodies (*b*) (26 per cent.) were noted "emaciated." The average body weight of these was 39s. 13ch.

Twelve bodies (*a*) (24 per cent.) were noted "much emaciated." The average body weight of these was 40s. 2ch.

Sixteen bodies (*b*) (32 per cent.) were noted "extremely emaciated." The average body weight of these was 38s. Generally, the weight is directly proportional to the state of nutrition of the body, as might have been expected.

(*a*) Nos. 5, 7, 9, 23, 27, 29, 34, 45, 46.
(*b*) Nos. 14, 20, 28, 30, 31, 35, 38, 39, 42, 44, 47, 48, 50.

(*a*) Nos. 2, 4, 15, 16, 17, 22, 25, 33, 36, 37, 40, 41.
(*b*) Nos. 1, 3, 6, 8, 10, 11, 12, 13, 18, 19, 21, 24, 26, 32, 43, 49.

firm bond of adhesion between the dura mater and under membranes. Their size and number I have certainly found less in natives of this country. This

(a) Healthy in 31 cases (*a*). (68 per cent.)

(e) No. 4.

(f) Nos. 7, 25, 29, 31.

45, 48, 50.

(g) No. 1.

(h) No. 7.

(i) Nos. 13, 33, 41.

(k) Nos. 3, 14, 20, 34, 35, 37, 40, 41.

(l) Nos. 2, 8, 10, 11, 12, 18, 19, 24, 28, 29, 49.

(o) No. 3.

(p) No. 50.

(q) No. 10.

(r) No. 9.

(s) No. 9.

dependent on disturbances in the circulation and blood. In

8. The pathological conditions of the *pleuræ* were as

(a) Healthy in 31 cases (*a*). (68 per cent.)

(b) The right pleura was perforated in 1 case of phthisis (*g*).

The amount of present and past pleural disease disclosed in the foregoing is very considerable; disease mostly, however,

were not observed. In one case, not included in this list, I found a tubercular condition of the pleura associated with pigment deposit and tuberculosis of the lung. The greater

NOTES ON THE MALARIOUS DISEASES OF PEGU.

By K. N. Macdonald, L.R.C.P., Lond.; L.R.C.S., Edin.; late Surgeon, Pegu.

Nothing can be more conducive to a proper understanding of the [illegible] of malarious diseases and their modes of operation upon the human system, nor more instructive for purposes of [illegible] than a careful study, based upon clinical observation, of the various phases they exhibit under a variety of circumstances, as existing among different races, in particular localities, and under certain conditions of climate.

With a view, therefore, to recording the results of my own experience in this direction, and of eliciting further discussion upon the [illegible] of malarious fevers, I purpose making a few brief observations, so far as I have been able to judge from observed facts, on some of the leading features and peculiarities which these diseases present among the inhabitants of this country, and contrasting them with the malarious diseases that are to be met with in most parts of India. The principal of these, I may say, the only malarious diseases to be met with in this province are intermittent and remittent fevers, diarrhœa, and dysentery. Hypertrophy of the spleen is, comparatively speaking, extremely rare, and goitre is almost unknown to the locality.

I. *Intermittent and Remittent Fevers.*—Taking the physical aspect of the province of Pegu into consideration, two-thirds of which is nearly completely covered over with dense jungle, being hilly and picturesque towards the north, and to the west and east, but extending into plains and flats, gentle undulations, strips of paddy lands and swamps towards the south, it is no matter for surprise should diseases of zymotic origin be prevalent; but it is worthy of note that they should differ materially, in many important respects, from the same diseases as occurring in other intertropical regions.

[illegible] in clearing this country of its primeval jungle forests, it is proportionably freer from malarious fevers and their complications than some of the most fertile and highly cultivated [illegible]. Both intermittent and remittent fevers are certainly common enough, but, so far as my observations extend, they attack the natives of India in a much greater proportion than the Burmese, probably in consequence of their being physically a weaker race of people, or from their mode [illegible]. This, however, as will presently be shown, be but since this paper is chiefly intended to give an account of the endemic diseases of the country as they affect the Burmese, I must confine my remarks almost exclusively to the latter.

The most important and remarkable difference between the [illegible] of the two races of human beings is the total absence of spleen enlargement as a result or complication of the former! Indeed, I have only seen two well-marked cases of this complication in Burmese who had never left the province, and both were apparently completely cured by blistering and appropriate internal treatment.

I am not aware that this comparative immunity from spleen hypertrophy amongst the Burmese has hitherto been recorded; [illegible] India should be so rare in this province.

It seems to me that in India this peculiar form of disease is produced in some districts independent of previous attacks [illegible] early age who were never known to have had fever. This is especially the case in the fertile district of Behar, where the "spleen test" could be applied with the chances of finding a much greater proportion of children affected by it than adults.

[illegible] cases is [illegible] Burmese. Here the "spleen test" could detect nothing, or, at all events, would certainly fail in giving any indications for judging of the salubrity or otherwise of any particular locality.

In my public and private practice at this station, extending over a period of eighteen months, during which time I have had little under 500 cases of fevers to treat, only thirteen were entered under the head of "splenitis," and two-thirds of these occurred among natives of India, some of whom acknowledged to having had several attacks of fever prior to leaving India. This is a very limited number, considering that, besides dispensary out-door practice, the Prome jail has got a daily average number of 280 prisoners, many of whom come from different parts of the country.

Though the results of dispensary and jail practice cannot be taken as certain criteria of the extent to which a population may be affected by any particular disease, still sufficient data can be collected from them to show whether an endemic disease is very prevalent, or very fatal, or otherwise. From my experience in this district, therefore, I can aver that the intermittent and remittent fevers of Pegu, though perhaps nearly as prevalent, are not so fatal as the malarious fevers of India, and are rarely followed by spleen and hepatic complications.

The quotidian type of intermittent fever is the most common, but it invariably becomes more or less irregular, if not treated in the earlier stages. The tertian type is also frequently met with, especially in the hot weather; and when either occurs in the cold season, it is often accompanied by catarrhal affections of the chest, or diarrhœa.

The mortality among the Burmese from these varieties is very [illegible] but [illegible] quently lead indirectly to serious consequences, chiefly by inducing a cachectic state of system predisposing it to attacks of diarrhœa and dysentery, which often end in atrophy. As, however, these latter diseases are also endemic, and the offspring of malarious influences, [illegible] it may be impossible to say whether a previous attack of fever had actually predisposed the system to their incursion or not.

The remittent type of fever is by far the most fatal kind of [illegible] met with in the province. Bilious, especially in the case of children and aged people who readily succumb to it, as in them it often partakes of an adynamic character. Bilious remittent fever is also to be met with occasionally, but I have never seen a case terminate fatally from it.

[illegible].—Since there does not appear to be any perceptible difference between the materies morbi which causes these different types of fever, the following remarks will apply equally to all.

Whatever may be the real nature of the morbific influence, it is probable that some other cause besides heat, moisture, and vegetable matter in a state of decay, is at work in developing their different types and complications; otherwise, why should a [illegible] by like circumstances, produce enlargement of the spleen in one race, or locality, more frequently than in another. The problem, for the present, must be solved in this way,—that the Burmese being physically a stronger race of people than the majority of the natives of India, and being accustomed to live better, at the same time being great vegetarians, besides having their house well raised off the ground on wooden posts or pillars, are neither so liable, nor so much exposed, to the reception of the most patent malaria which is generally admitted to float merely on the surface of the ground.

If this does not explain the difference, it must be presumed that the poisons are of a different nature, which is very likely, because malaria often induces "leucocythæmia splenica," as [illegible] [illegible] [illegible]

having a large strip of paddy lands to the east, another of

through the centre of the station, the whole being included in

In the treatment of intermittent and remittent fevers, I have it successful. An emetic or a purgative at the commencement, according to the stage of the fever, after which I give five-grain doses of quinine three times a day, and rarely exceed ten grains. This, with attention to the diet, and removal from the unhealthy locality, is sufficient to cure almost any case that is not otherwise

I have found serviceable in many cases but I in my experience, I have met with the success I anticipated from it.

II. *Dysentery*.—This disease is rather prevalent among the principally north of the delta of the Irrawaddy, where the country becomes more or less hilly, and is of a purely malarious nature. It is essentially an endemic disease in the Prome district, and popularly attributed to the water used for drinking, but I do not think that this can invariably be the case, because a great proportion of the population obtain their drink- as sweet and pure as that of most rivers for at least six months out of the year—viz., from December to May; but during the rains, which generally set in towards the end of May, it becomes, of course, quite muddy, and cannot be used for drinking purposes. Though diarrhœa may, perhaps, be more prevalent at this season of the year than it is in the hot weather, owing to sudden changes of temperature, its real season commences at the close of the rains, and lasts till February, in consequence of more malaria being engendered in these months than at any other season of the year; besides, owing to the low temperature of the nights and the great heat of the days—the thermometer sometimes being as low as 58° at sunrise, and as high as 90° in the afternoons, with the concomitant of dense fogs in the mornings—it can readily be imagined that such circumstances should act both as predisposing and exciting causes of bowel complaints.

I attribute its prevalence at this station entirely to malaria, and which becomes inundated annually by the waters of the

This is corroborated by the facts that that portion of the to diarrhœa, dysentery, and fevers than those who live in more elevated localities, and that all Europeans who come to reside here for the first time, and who never drink but filtered water, are invariably more or less affected by it.

The children of the latter are also especially liable to its inroads, in whom it often becomes chronic, and very difficult to cure without a change of air.

Beyond the ordinary principles of treatment, I generally administer small doses of quinine, which in many cases prove singularly beneficial when the ordinary astringents fail. In the case of Europeans, besides the above, I never omit recommending the wearing of a flannel belt round the waist, the efficacy of which I can vouch for from personal experience.

III. *Dysentery* is a universal and often fatal malady in this province. When it lapses into the chronic state, it generally ends in atrophy,—a complication which is rarely curable. The same result also not unfrequently follows chronic diarrhœa.

The acute disease is comparatively easily cured, but the chronic variety is a very intractable disorder. It is less amenable to treatment in the Burmese than in the natives of India, owing to the mixed kind of diet they are in the habit of using, and their predilection for a horrible preparation of fish in a state of decomposition, called "ngapee," which they use under all circumstances of health and disease.

It is very prevalent during and after the rains, probably from the same causes which had already been mentioned under the head of diarrhœa.

The miasm which induces it appears to be analogous to, if not the same as, that which causes diarrhœa, for they are often found to lapse into each other,—a circumstance dependent upon the parts affected the amount of the poison absorbed into the system, and the intensity of its application.

In its symptoms and progress it does not appear to differ much from the same disease as met with in India.

When it ends in atrophy, the frequent dejections often cease altogether, and the bowels become as regular as they generally are in a state of health; still, the disease progresses, and ultimately proves fatal.

In after death, beyond a remarkable paleness of the mucous membranes of the small and large intestines, and thickening of the mucous coat of the colon.

In the treatment of acute cases, I believe ten-grain doses of ipecacuanha, three times a day, to be more efficacious than the heroic doses of some writers, because I meet with so few cases that are proof against its emetic properties, even in ten-grain doses.

It is not enough to tell a patient that his recovery depends upon his taking this medicine; the medical attendant must see it administered in his presence, especially if his patient displays any symptoms of reluctance to a repetition of the nauseous effects of the drug.

I invariably lessen the dose in such cases, and combine it with a fourth or half a grain of opium instead.

Mercury and opium are also valuable remedies, when administered in the early stages of the disease; but my own conviction is that most cases of acute dysentery in these latitudes can be cured by little more than removal from the unhealthy locality, with rest, careful regulation of the diet, and attention to clothing, independent of pills, powders, and draughts.

Conclusion.—In the foregoing remarks, I should gladly have availed myself of statistical information from our public registrars respecting the exact mortality existing among the Burmese from the several diseases treated of in this paper; but since one system of registration is as yet in its infancy, it would be too premature to rely upon such records as being thoroughly trustworthy and accurate for scientific purposes.

PROME, 26th *May*, 1868.

ON THE BICHLORIDE OF METHYLENE AS AN ANÆSTHETIC.

BY J. FAYRER, M.D.

PRESENT:—Dr. Green (Inspector-General), Dr. Chevers, Dr. Fayrer, Dr. Partridge, Dr. Johnson, Baboo Mohendro Nath Guptoo, H.S., and the usual dressers.

CASE I.

August 24th, 1868.—Judonath, Hindoo, aged 28 years, has been in hospital since 1st June, admitted in a very low state of health, with fever, anæmia, slightly enlarged spleen, feet and anasarcous legs. He improved under quinine and iron, and was sufficiently well on this date to have his scrotal tumour removed. It was about the size of an adult head, and on each side was a large hydrocele. His weight before the operation was 8st. 2lbs.

He was brought under the influence of the bichloride of methylene at 8-30, and during the operation, which lasted about 25 minutes, about one ounce was used. He came under the influence of it readily, and the action seemed very like that of chloroform. His pulse was accelerated, rose above 120, and, towards the completion of the operation, became rather intermittent.

There was no excitement, and when he recovered he did so by degrees, and not suddenly. In fact, the action of the anæsthetic seemed scarcely to differ from that of chloroform. The following day, 25th, the pulse was 130; temp. 103°. Face rather flushed, with headache.*

CASE II.

Ajaoo, Chinese, aged 21 years, admitted August 5th with fungus testis of the right side.

The operation for reduction was performed on the 24th August under the influence of the bichloride of methylene; about 5vi. were administered during the operation, which is a rather tedious one, and anæsthesia was apparently complete. He came under the influence of the anæsthetic readily, and recovered from its effects gradually. Pulse rose under its influence. He was sick on the table on recovering. In every respect the action of the methylene appeared to resemble that of chloroform.

On the following morning his pulse was full and quick, 110; temperature in axilla 103°. Face flushed; headache; pupils contracted. He vomited several times throughout the day of the operation.

MEMO. BY DR. N. CHEVERS.

The effect of the bichloride of methylene upon the heart's action was nearly the same in both cases. At first the result of the inhalation was to retard the pulse somewhat, but soon rapid evidence of increased cardiac excitement. I note the full influence of the drug, the heart's rhythm was distinctly affected. In neither case the pulse never lost its fullness, but the beat became hardening, unequal, and irritant.

This led me, in the first case, to stop the inhalation. Latterly the pulse was more as in the second case, becoming, in the scrotal tumour case, somewhat labored. It appeared that this agent excites the heart's action considerably, and when in full action, affects the respiration. A stethoscope would be found very serviceable upon a patient, fatty, or otherwise feeble, or diseased heart. I am not prepared, after these two cases to think that it is the same as chloroform, but only record this as a first impression. N. C.

PRESENT: Dr. Chevers, Dr. Fayrer, Dr. Chuckerbutty, and Dr. Johnson.

CASE III.

On the 28th August the bichloride of methylene was administered by Dr. Johnson to Mr. ——, with the view of inducing anæsthesia during the removal of part of the great toe nail for onychia.

At 9-28 a.m. the first inhalation was commenced in the recumbent posture; one drachm having been poured into a folded pocket handkerchief, was held near the nostrils, and thus gently inhaled. The pulse before commencing was 80; it immediately began to rise, and after a few respirations it was 104. He said the sensation was very like that of inhaling chloroform; there was just as much throbbing and ringing in the ears and pulsation in the chest, and, if anything, the vapour was more pungent than that of chloroform.

At 9-30 another half-drachm was poured into the handkerchief. Pulse 108 in the minute.

9-31.—It was gradually taking effect.

9-32.—Pulse less frequent, 94 in the minute.

He was quite conscious, and described his various sensations as they occurred.

9-33.—Another half-drachm given. Slight cough, caused by the pungency of the vapour.

9-35.—Said it was more irritating than chloroform. Throbbing in the head; pulsation in the heart painfully distinct. Began to talk in an excited manner. Pulse full and regular, 84 in the minute. There were occasional slight muscular jerks in the arms. Said he felt "almost off." Talked excitedly about the throbbing in his head and chest. Tongue slightly affected.

9-37.—Quite incoherent, and much more excited than when he took chloroform on a former occasion for a similar operation.

Pulse again excited, but quite firm and regular, 100 in the minute; was still apparently sensible to pain, shrinking if the toe was touched.

9-38.—Pulse down to 84 in the minute. Another half-drachm given; talking quite incoherently; asked for more, and said he had had only two drachms. Raised the arms and legs in a sort of cataleptic manner; pulse 96.

9-40.—Cried out; was still sensible to pain; shrank when the toe was touched.

9-41.—Another half-drachm given.

9-42.—He was quiet, and seemed unconscious of pain; the eyeballs bore touching. The toe nail was then divided longitudinally with a strong pair of sharp-pointed scissors, and the diseased half removed by evulsion. He appeared to feel this, and cried out.

The wound was dressed with the carbolic oil dressing, and he appeared to feel this also.

9-44.—The operation and dressing over; consciousness returning, and with it nausea and vomiting; said he felt nothing whatever of the operation or dressing, though he certainly appeared to do so.

Face had no more congested appearance after return of consciousness than when he took chloroform, on which occasion also there was no sickness.

9-47.—Had quite recovered, but talked in rather an excited manner; insisted that he felt no pain. There was no headache, and the remark had passed away.

9-48.—Pulse 80 in the minute. It was perfectly regular and full throughout.

He said that he would as willingly take this anæsthetic as chloroform. Both equally annihilated pain; and there was very little difference in their operation.

He thought that the vapour of the methylene was rather more irritating than that of chloroform; it also caused sickness during recovery, which the chloroform did not. Recovery seemed to him, as well as to those about him, rather quicker than from chloroform, and during its administration he once or twice appeared to regain consciousness more rapidly than when

* The pulse was always strong, but quickened and intermittent. It was administered very carefully by Dr. Johnson, Dr. Chevers taking notice of the state of the heart's action and respiration.

There was no sickness in this case.

engorged with blood, the left cavities empty.

[illegible] always, in such a marked degree from ether and tetrachloride of [illegible] bichloride of methylene, the condition was midway between the two. The lungs contained blood, and both cavities of the heart also. In fact, the column of blood from the right to the left side of the heart remains unbroken, while the pulmonary vessels and the cardiac cavities are under no undue tension. This condition is very favorable for efforts at [illegible] bichloride of methylene as follows:—

1st. It is an [illegible] as deep insensibility as chloroform.

2nd. It [illegible] but to develope effects more of it is required, in the proportion of six parts to four.

3rd. It possesses a [illegible] than other anæsthetics.

4th. When [illegible] very prolonged, and is reproduced with great ease.

5th. Its influence on the nervous centres is uniform, and it creates little of any disturbance or break of action between the respiratory and circulating functions.

6th. [illegible] the symptoms of recovery are sudden.

7th. In some cases it produces vomiting.

8th. When [illegible] respiratory and circulating mechanism.

9th. It interferes less with the muscular irritability than [illegible]

10th. It combines with ether and with chloroform in all proportions.

The evidence of the cases here recorded is confirmative of the above propositions, with the exception of the 5th and 6th. Dr. Chovers, who watched the patients during its administration, reports that in two cases the heart's action became intermittent [illegible] sudden; they all regain consciousness by degrees, but, it may be, more rapidly than would have been the case under chloroform. But in the third, Mr. ——, a medical man, thoroughly cognizant of the action of chloroform on himself as well as others, said that the sensations, both of becoming insensible and of regaining consciousness, were very much in the case of the methylene like [illegible] to have further experience of it. But it differs so little in smell and pungency to the person who inhales it, and, if the result of [illegible] anæsthetic, so little in other respects from chloroform, that it is hardly [illegible]

It is to be hoped that the bichloride of methylene will receive further trial by the profession in India; for it is only by the cases in which it has been administered, not only justify, but call for further experience.

ON THE APPLICATION OF ICE IN THE CURE OF SCIATICA.

By JAMES [illegible], M.D.,

[illegible]

This disease is sometimes so intractable that it seems worth while to place on record a very unmanageable case, in which the application of ice appeared to have a most beneficial effect. The subject of the case was a strong, healthy gentleman, who had suffered in a most distressing manner for some time before I saw him,—on the 6th February, 1868. I found that a great many medicines and appliances of various kinds had been used without much apparent effect. I tried a good many more, including oil of turpentine, hydriodate of potash, quinine, iron, [illegible], but none relieved him much. I then recommended him to try hypodermic injections of muriate of morphia. These caused entire cessation of pain for some time after they were given.

In March he left for Bombay, and felt a good deal better for some time after his arrival, which he attributed to his having resumed the practice of bathing in cold water. "After that (to quote my patient's own words) clouds appeared, and continued for the remaining fortnight of my stay there, causing me to suffer every night with the pain, which was only allayed by the [illegible] morphia until the sun. This I had to repeat every night.

"On 25th April I left Bombay for Nagpore, and the change to a drier climate made the pain much more severe and continuous, so that I was confined to my bed. The pain now extended to the foot and ankle, which became so sensitive, that I could not bear them to be touched, and could not, even if seated, let the [illegible]

"[illegible] by Dr. Law, and to [illegible] made of extract of Indian hemp; also applied hot flannel fomentation. Finding that this latter at once increased the pain, I suggested that the application of ice should be tried, as I had heard that it had been found of service in some cases of neuralgia.

"Dr. [illegible] treatment, and procured me a good lump of ice that day. I applied it at once (the ice being next the skin) all over the region of the thigh-joint and lower portion of the back, on the side of the affected leg. The pain decreased almost immediately, and every subsequent application of the ice relieved it further. From that time I have enjoyed excellent rest at night, and have only had slight twinges of the pain in my ankle; one-half of the sole of my foot now even has become benumbed. This does not prevent my walking about freely, and is only a trifling inconvenience. Occasionally I find that the twinges in my ankle are accompanied by a sense of heaviness and stiffness, with some pain in the lower part of the spine. I tried a mustard plaister across the small of the back for this, but it did not do any good. I have also applied ice, but without any permanent effect."

The date of the letter from which the above extract is taken is the 4th of June. Last month I wrote to ask how he then was, and I append his replies to four questions that I put to him. [illegible]

1. "I am still quite free from the pain of sciatica; in fact, I have never had any return of it since the day I applied the ice.

2. "For two months [illegible] I have not had any twinges in [illegible]."

3. "I am also [illegible] any heaviness [illegible] in the lower part of the spine.

4. "No [illegible] mentioned them to [illegible]

MEDICO-LEGAL NOTES.

By R. F. HUTCHINSON, M.D.,

[illegible]

THE two following cases of precocious puberty in European female children may prove interesting.

1. M. L., born August 25th, 1844, somewhat prematurely, grew up into a strong, healthy, and active child, and at the age of ten looked fully two years older, being tall and stout. On June 1st, 1855, she menstruated for the first time, and has done so regularly ever since. But she has fallen into very bad health. When about thirteen, she began to show hysterical symptoms, and gradually these gave way to silliness and eccentricity. As her infirmity increased, she became subject to fits of melancholy and occasional violence; her growth was arrested at eleven or twelve years of age, and she is now thin and small, with a vacant look in her eyes, and a silly smile on her face. I may add that she is a posthumous child, and that her father died insane.

In her case menstruation set in when she was ten years nine months, and six days old.

2. A. R., born December 9th, 1856, fully four weeks earlier than she should have been, was a very delicate infant, requiring to be nursed until she was two and a half years old, and only becoming really strong when seven years old.

In June, 1867, she began to suffer from attacks of intestinal irritation, accompanied with more or less fever, and on October 1st, 1867, after rather a sharp attack, she menstruated for the first time, and has been regular ever since.

These pseudo-dysenteric attacks were clearly due to the irritation produced on the rectum by the enlarging uterus.

This girl is now stout, and in rude health—mammæ well developed; but in appearance, manner, and dress, she is a mere child.

With her monstruation set in when she was ten years nine months and twenty-two days old.

[illegible] might have been [illegible] seven years and seven months old!

[illegible] 18th, 1868.

PERIODIC HÆMATURIA.

By C. R. FRANCIS, M.B.

THE subject of "periodic hæmaturia" has been recently much discussed by the profession in England; and a valuable communication was contributed by Dr. Lionel Beale in the August number of the *Practitioner*, which he concludes by saying, "perhaps the disease is, after all, more closely allied to ague than to any affection of which hæmaturia is a symptom." Dr. Beale, I venture to think, has detected the true indication of this discharge.

Practitioners have been so accustomed to regard diaphoresis as the ordinary and only termination to an attack of ague, that they are not prepared to recognize any other as critical.

[illegible] H.M.'s [illegible] in charge of the English and French legations in China in 1862, submitted to the senior medical officer some original views on the nature of discharges other than diaphoretic in connection with intermittent fever. The gist of his views amounted to this: that transmission to the intestinal tract and other parts was frequently substituted, in this disease, for the sweating stage. Dr. Rennie was, for some time, engaged in experimenting at the General Hospital in Calcutta, with a view to testing the [illegible] nearly every disease. In this somewhat crotchetty idea, he was not borne out by facts; but his views on the subject of [illegible]

usual diaphoresis. The character of the discharge in Dr. Beale's

not very clear however whether, in the cases referred to, there were conditions corresponding to the three stages of a periodic febrile attack with the so-called hæmaturia as the most prominent of the three, or whether this last was simply a cyclical condition,

habit. To us, who live in a tropical climate, the Protean consequences of malarious infection are familiar enough; and it is more than probable that an Indian physician would at once

ON INSOLATION.

By JOHN E. POTTER.

4. Cases of

not quite running on to that condition.

5. The morbid changes that take place are very similar

usually seen in fatal cases of fever and insolatio.

I must express my strong conviction that the entire absence of morbid lesions within the cranium is confined to cases of

case of insolatio that did not show more or less congestion of

semi-opaque state of that membrane.

These, with other minor details, bearing in the same direc-

argument.

Notices to Correspondents.

Dr. POTTER.

Dr. [illegible] MACNAMARA.

Dr. [illegible] CHAMPION.

[illegible] SMITH.

Assistant Surgeon [illegible] DUTT.

Dr. [illegible] M. N. I., *Malwa*.

Dr. [illegible] *Mhow*.

Dr. [illegible]

Dr. [illegible] MACKENZIE.

Assistant Surgeon [illegible] KANE, *Shahabad*.

Apothecary [illegible], *Meerut*.

Sub-Assistant Surgeon [illegible] PANDURANG, *Bombay*.

&c., &c., &c.

What [illegible] notices, &c. noticing several important subjects, which must therefore be postponed till a future number.

* Gadfly.

The Indian Medical Gazette.

SPECIAL NOTICE.

As we are desirous of correcting our "Address-List" of Subscribers for the New Year, it is particularly requested that in any case where present addresses are insufficient or inaccurate, a new and correct address may be sent to us during this month.

WYMAN BROS.,
Publishers.

HARE STREET, CALCUTTA }
December, 1868. }

TO OUR SUBSCRIBERS.

LATE AND IRREGULAR DELIVERY.

INNUMERABLE complaints have been received of the late and irregular delivery of the *Indian Medical Gazette*: and it is frequently stated that the Journal does not reach its destination [illegible].

The Publishers beg to assure Subscribers that the delay *rests entirely* with the Post Office. The Publishers have been informed that newspapers are frequently allowed to lie there [illegible] before despatch.

In all cases where miscarriage of copies has taken place the Publishers have hitherto, on being advised, invariably sent *duplicates*, at loss and inconvenience to themselves, (though they are by no means obliged to do so,) rather than that Subscribers should suffer. A representation is being made to the postal authorities, and it is hoped this may have the effect of securing greater regularity in future.

If every case of late delivery or miscarriage be promptly brought to the Publishers' notice, they will be the better enabled to find a remedy against the annoyance now so frequently experienced both by the Subscribers and the Publishers themselves.

HARE STREET, } WYMAN BROS.,
December, 1868. } *Publishers.*

THE INDIAN MEDICAL GAZETTE for 1869.

SUBSCRIBERS not intimating their wish to cease subscribing, will be entered on the List of Subscribers for 1869.

HARE STREET, } WYMAN BROS.,
December, 1868. } *Publishers.*

BINDING OF BACK VOLS.

WE shall be happy, on receiving the loose Nos. of the past or previous years, to return BOUND VOLUMES, instead at a charge of Rs. 2-4, to include forwarding cost.

HARE STREET, } WYMAN BROS.,
December, 1868. } *Publishers.*

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, will be found some of the brightest ornaments of British history. I cannot do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

TYPOGRAPHICAL ERRORS.

WE must apologize to our valued correspondents, as also to our readers, for the numerous typographical errors which occasionally appear in this journal. The tricks of printers' devils in India seem even more lively than those of their confrères in England. The feats which they execute in their cabalistic dances amongst the type has a remarkably irritating effect upon the letters, which are in consequence so strangely displaced, that the writer's meaning becomes simply unintelligible. We write in fear lest the bracing effect of the coming cold season may give an additional impetus to these imps of the press; but we are assured that the master of the ceremonies intends to keep them well in check. With this assurance we must endeavour to be content, and hope for better results in future.

CHOLERA HOSPITALS.

MORE than half a century has elapsed since the profession was first brought face to face with the great pestilence of modern times, and it still remains appalled by its progressive energy, yet utterly unable, *professionally*, to resist it. Volumes, whose numbers may be estimated by thousands, have issued from the press, in numerous languages, during this period,—all treating of the disease. But they have practically taught us NOTHING; and it has been left for a military hero to instruct mankind in the best method of dealing with the enemy, viz., how most effectually to run away from it!

During fifty years of active enquiry no professional remedy has been discovered upon which positive reliance may be placed; nay, the startling fact remains that cholera has fairly eluded us and gone far ahead. Forty years ago its victims were one in five of those attacked, and now these are multiplied three-fold. Whereas, then, twenty succumbed of every hundred, now nearly 70 per cent. gasp out their souls before this Death's most active agent. During the past forty years the relative mortality from cholera in India has been steadily increasing. When a European soldier enters a hospital cholera-stricken—*now*, the chances are at least 3 to 1 against his ever coming out again alive. Forty years ago, as we learn from Dr. Bryden's tables, the death-rate from cholera in the European army was 22·89; in 1867 it was 66·07! And this astonishing difference is not the result of a sudden rise, the cause of which is evident, but of a gradual and systematic ascent, the history of which requires investigation. With the Native army in 1829 the death-rate was 19·56; in 1867 it was 50·82, arrived at by the same process. Nor have the prisoners in our jails escaped. The cholera death-rate with them in 1867 was 42·88. Dr. Corbyn tells us, in his book on cholera, that, when he wrote—now forty years ago—the mortality in the practice (almost exclusively native) of Mr. Young was only 8·68 per cent.! This statement is confirmed by Dr. Strong, who, when in medical charge of the 24-Pergunnahs, drew up a set of tables extending over 30 years, in which the death-rate,

1892: we have been familiar with it during the past quarter of

June and July last amongst the villages about Palamow, near

corps had recently arrived in India, and because the disease is

We have gone back to the days of the *Black Death*,—to the

brother in the trade Rs. 20,000 for his good-will for the single

which is now a shame upon our profession would be reduced more than half. But how is this treatment to be ascertained?

tested.

with a fatty *heart*, if the victim should unfortunately fall

fully believe that these chances will be exactly proportioned

the medical officer treats them in a general sort of way, sometimes trying one remedy and sometimes another; or he may be satisfied that a certain line of treatment is *about the best*; and he remains content if the mortality does not exceed 50 or

ought not to lose more than half. And so the sons of Æsculapius rest in the belief that cholera is beyond the domain of medicine, and that there is nothing more to be done!

Are we to stop here? Whilst we have a Small-pox Hospital visits the metropolis at one only of the seasons of the year, shall remains all the year round? Is it known that 4,000 natives die of cholera every year in Calcutta? Are there to be special hospitals for special diseases in other parts of the world where those diseases are rife, and are we, who live in the very *home* of the great plague of the earth, to be without the opportunity of

remedy for constitutional syphilis: and, after much discussion,

commission to organize and watch proceedings and report the result, would be attended with infinite good both to science and world. She, with her vast opportunities, is bound to use her

talked of a Cholera Hospital, and all have agreed how advantageous it would be, for years past; but no one *does* more. It is an imperial thought, and should be an imperial scheme—not left to the philanthropy of an individual; and we commend it to the noble-hearted Governor-General (now, alas! about to leave us), whose ambition has ever been to promote the welfare of the millions of India. When Dr. Corbyn wrote, recommending a particular plan of treatment, the Governor-General of the day—the Marquis of Hastings—directed that his pamphlet should be

Dr. E. Hare advocated the employment of a remedy for the malarious diseases of India, Lord Dalhousie placed a

at his disposal, that a remedy might have a fair trial. Have not the results justified the measure? Will not Sir John Lawrence take the first step in the scheme of a Lock Hospital, and, although he can himself now do nothing, leave the idea as a legacy to his successor, and endeavour to inoculate Lord Mayo with a sense of his importance? Money, of course, must be freely expended, and a year or two may elapse before a definite line of treatment is decided upon; but these are [illegible] and unworthy of a moment's [illegible]. Can we look at the debris of many of our public works and think of the thousands and millions which have gone to swell the persons and the importance of contractors, who have thus [illegible] that the expense of the Government treasury [illegible] go from year to year squeezing [illegible] money in this way, and I can say, [illegible] for schemes of philanthropy? It is a Utopian [illegible] but one which involves a question of such vital importance to the *people*, that we venture to say [illegible] would have endeavoured thus practically to solve it half a century ago.

On the score of humanity *we* write, and urge its adoption. When those who have the charge of the country's finances are brought fully to understand its money value, they must, on [illegible] grounds, advocate it too. It was only when Sir Francis Head informed the people of England that a new railway engine and tender cost exactly £1,250 upon a certain line every Monday morning, that they began to look into the money question connected with railways. Ten years ago, the annual [illegible] of European soldiers to the state was 69 per 1,000. This number has now—as the result of better barracks and improved hygiene—been reduced to 20! The British soldier does not now run, as he did then, the risk of *three* [illegible] of Waterloo or Inkerman [illegible] every year of [illegible]. But he runs the risk of one; and shall we not endeavour to do away with even this? Ten millions of public money have been sanctioned for new sets of buildings, improvement of those existing, fortified posts, [illegible] for Europeans. Now to [illegible] we will not say [illegible] needful [illegible] avail will be all the valuable results of Colonel Crommelin's labors if, from time to time, at one fell swoop, this howling, [illegible] for its very safety? The Government of India is essentially a paternal Government. It needs but to bring to its notice the [illegible] relieve them. It is not sufficient to issue endless lists of questions, wearying in their constant repetition, nor for a "commission" [illegible].

The Government, doubtless, labours under the impression that nothing more is required, and therefore its probable rejoinder to our appeal—why spend money unnecessarily? But [illegible] our [illegible] or not a Chelsea [illegible] venture to [illegible].

LOCK HOSPITALS IN CALCUTTA.

COMMUNICATED.

WE beg to call the attention of our readers to the following passages in the Municipal Budget, submitted for consideration at the meeting of the Justices of the Peace on the 17th instant:—

"*Lock Hospital.*—The Government have intimated that the current expenditure of the proposed Lock Hospital will amount to about Rs. 72,000 per annum, and have proposed that half of this sum shall be provided in the Municipal Budget, in accordance with the resolution passed at the quarterly meeting held on the 15th August last. This estimate is based on a report from the *Commissioner of Police, who* calculates that the number of common prostitutes in the town of Calcutta is about 6,000, not counting 10 per cent. as discussed. *In* proposes that hospital accommodation should be provided for 600.

"As the Justices have already consented to defray half the current expenses of the hospital, we must [illegible] allotment required by Government, subject, of course, to the understanding that, should the expenditure be less than the estimate, the Justices will reduce the allotment proportionately."

It would have been well if this matter had been referred to the Medical Justices in the Conservancy Committee before it was brought before the Finance Committee. But as this has not been done, we address the following observations for the earnest consideration of the Justices. The necessity for the *Lock Hospital* has arisen out of "The Contagious Diseases Act for the prevention of [illegible]," lately passed by the Legislature. Now, the prevention of venereal diseases is intimately connected with the control of prostitution. The control of prostitution is a police affair, and for the purposes of this Act, has for its object, 1st, the compulsory registration of prostitutes; 2nd, the compulsory subjection of prostitutes to [illegible] examination, and 3rd, the compulsory detention of diseased prostitutes in hospital till they are certified as *cured*. To carry out this object, it will be necessary to [illegible], and a police establishment, which will cost money.

The prevention of venereal diseases is a medical question, and has for its object, 1st, the detection of disease in prostitutes; and 2nd, the medical treatment of diseased prostitutes. The medical treatment will, of course, be conducted in the Lock Hospital. Now, assuming that there will be 600 [illegible] one per minute, it will take one medical officer no less than [illegible] poor women to do to get their food and medicine. Must they wait till the Doctor's visit is over? or should the Doctor's visit and the distribution of food and medicine go on together? No; the Doctor's visit must be over by 9 o'clock a.m., or there will be great confusion and neglect. It is clear, therefore, [illegible] be [illegible] be [illegible] be [illegible] be [illegible] be [illegible] be properly [illegible] be [illegible].

policemen. Thus much valuable time and material would be

be quite unsatisfactory. Further, we must think of the moral debasement, bribery and corruption to which such people will

Hospital itself.

we must nip them in the bud, and that cannot be done unless each prostitute is examined at least once a week. In many of the European cities each prostitute is examined twice a week. Now, dividing 5,400 by the six working-days in the week, there

certainly be an enormous evil—*i.e.*, to collect these 900 females in any one place; and yet not so great an evil as examining them in their own houses. The whole work could be done in two hours by twelve Sub-Assistant Surgeons subordinate to the two medical officers of the hospital. The advantage of this plan would be, that after the examination the prostitutes could communicate with their friends in the hospital without any further trouble. On the other hand, many of them would have to travel a considerable distance to reach the hospital, besides the temporary over-crowding.

However, for the public convenience, it would be better to have six Lock Hospitals situated in different quarters of the city, instead of one. This plan would make the hospitals easily accessible, and greatly reduce the over-crowding. The expense would be just the same, as for every hundred patients

12 Medical Officers, at Rs. 200 each	...	Rs. 2,400
12 Sub-Assistant Surgeons, at Rs. 100 each	...	1,200
Total monthly expenditure	...	Rs. 3,600
		12
Total annual expenditure	...	Rs. 43,200

On the other hand, the saving of police expenditure would be very great, as no policeman would be required to attend medical

supervision and control of the medical arrangements seem to

Commissioner of Police may have the control and responsibility of the police arrangements, but the medical arrangements are beyond his sphere, and should be confided to professional men, according to the usual practice of Government, responsible to the head of the Medical Department.

So far for the prevention of venereal diseases among the civil and military populations. There is another question which concerns the comfort and security of the prostitutes themselves, which must be taken up sooner or later. All the foregoing measures will necessarily involve a great deal of hardship and loss on that class of females. As they have no friends, their absence from home will frequently result in the loss of their little property, and they will have nothing to support themselves with for a time after their discharge from hospital. To guard against these evils, prostitutes in all European towns are under direct Government inspection. The best system is that adopted in Prussia. There all prostitutes are compelled to live in licensed brothels, and the masters of these brothels are a sort of police agents. No solicitations are allowed in the streets, nor even from open windows. The masters of the brothels are responsible for the order and good hygienic condition of their dwellings, as well as for the proper care, feeding, and security of the prostitutes. The only indication of their houses is a green paint on their doors, and their visitors are obliged to enter and depart without noise or disturbance. When any of the inmates is detained in hospital, the master is responsible to the police for the care of her property, and he is bound to feed her too, on her discharge therefrom, till she can earn something for herself.

This is a very rational system, and more conducive to public morality and diminution of crime than prudish abstinence from all interference. Some such system must be introduced here before the work is completed. Prostitutes may be outcasts, still they are citizens; and it is just according to the treatment they receive that they constitute either a dangerous or a peaceable class. Neglected, their homes become dens of iniquity; properly cared for, they often prove useful members of the community. In the city of Hamburgh they contribute no less a sum than 60,000 dollars annually to the Municipality. In Calcutta there is no reason why they should not pay the some amount, if not more, towards the Municipal revenue, and that would then amply suffice to meet all the expenditure incurred on their behalf.

THE MEDICAL CHARGE OF NATIVE REGIMENTS.

We beg to draw attention to a paragraph in our English

furlough in the Indian Medical Service have given rise to great dissatisfaction at home. It is understood there, amongst medical students, that the medical officer in charge of a native regiment forfeits all claim to his appointment if he takes furlough to Europe. As all other appointments are held to be "staff," to which the incumbent can return, this is thought to be an

We venture to draw the attention of the authorities to the fact. The Indian Medical Service is no longer the attractive

service that it was when our present Governor-General first landed in India. The executive ranks are better paid now than then, and so far there is improvement; but the *status* of the Indian medical officer is gone. Ichabod! his glory has departed, and there is now but one stimulus to enter the service—the same pitiless power which drives men into the ranks of our English army—viz., poverty. It is a delicate subject to dilate upon—difficult even to *handle*—without giving offence, which it is far from our wish to do. We will therefore say no more, but earnestly entreat our rulers to look into the question. As the pay of a medical officer in medical charge of a native regiment is a consolidated sum, it would seem that the intention of those who framed the rules was to recognize such a charge as a "staff" appointment. In fact, we are not sure that this is not the view taken by the Pay Department in this country, and that there is some prospect of legislation on the point. May we venture to urge that, if so, it be speedily dealt with and disposed of? Those who are not familiar with medical opinion at home, little know how far a concession of this kind would tend to induce contentment, and to remove one of the barriers—and that a very important one—which now prevents the best men from entering our ranks, and becoming members of the Indian Medical Service.

SCURVY IN FORT WILLIAM.

OUTBREAKS of scurvy are rare, now-a-days, in India. On looking through Dr. Bryden's statistical tables for the last ten years, we find that the disease has become—as the result of our better acquaintance with its pathology, and of appropriate prophylaxis in the shape of suitable diet and vegetables, in addition to improved hygiene generally—almost extinct throughout the length and breadth of the country. A few cases of scurvy are admitted annually into the city hospitals, supplied, almost invariably, by ill-found Liverpool ships; but, beyond this, the existence of the disease in India is almost unknown.

When, therefore, the announcement reached us that it had attacked a fine Sikh regiment in the Fort—more than fifty being admitted into hospital in a few weeks, of whom five or six had died, independent of some twenty or more who had been sent to their homes on medical certificate—it seemed almost incredible; the more, too, because the men, we understand, have not been much underfed, and because they have eaten freely of what in the Punjab is considered, and with reason, almost specific as a prophylactic against scurvy—viz., *onions*.

We are happy to hear that the regiment is now improving in health, which is attributed to the free exhibition of lime-juice throughout the entire corps. The sick in hospital have also derived great benefit from being removed into tents.

But what has been the cause of this unusual dyscrasia of the blood? One reason assigned is the difficulty of procuring milk—of antiscorbutic reputation, and a favourite item in a Sikh's diet—which, however, is too expensive a luxury for him in Calcutta, as is also butcher's meat, to which he is likewise very partial. This may be *one* in the chain of causes, of which there have been, doubtless, several in operation: probably excessive work, confined barracks, and prolonged residence in an uncongenial climate have been the chief of the evil influences.

Excessive Work.—The [illegible] has for some time been [illegible] during the week.

Confined Barracks.—We would draw the attention of the Sanatory Commissioner to the accommodation provided for the native regiment which is required to reside in the Fort. The bomb-proof barracks in which the men live are simply dungeons, with but little ventilation, reminding the visitor of the *Black Hole* of a past century. We believe that they have been repeatedly condemned. They resemble the range of rooms on the basement floor of the Medical College Hospital, which are only used for stores, and, temporarily, for lunatics, and drunkards brought by the police. For ordinary human habitation they are quite unsuited. These native barracks in the Fort are, moreover, according to the hygienic views of the day, far too crowded.

Prolonged residence in an uncongenial climate.—The regiment has now been more than four years in an unsuitable climate, if we include Benares.* We must remember that the Sikh is no *personally* cleanly. He would therefore naturally suffer from unfavorable influences more than the Oudh sepoy, who bathes and keeps the "cutaneous emunctory" in full operation, daily.

The lesson to be learnt from this outbreak, we venture to urge, is that the Bengal climate is singularly unsuited to the Sikh constitution; and if, added to this, he cannot afford suitable food, and lives in close quarters, being at the same time very much over-worked, the chances are strongly in favor of his blood becoming impoverished, even to the melancholy extent which we have recently witnessed in Fort William.

As these sheets are passing through the press, we observe that tenders are being invited for the construction of a Native Infantry *Hospital*. Will it not be wise to do the same for *barracks also?*

A PORT SURGEON FOR CALCUTTA.

WHERE is our Health Officer for the harbour of Calcutta? Why, when other ports have their Port Surgeon, is the capital of India still without this important functionary? Are we to wait until a grave catastrophe drags into the light of noonday some of the *arcana* which are a disgrace to the river? Meanwhile, the various duties which a Port Surgeon is urgently required to perform remain neglected!—an official sanitary inspection of the shipping, a careful enquiry into the condition of the crews, and the investigation and analysis of food and water supplies being amongst the chief. A Sanatory Commissioner for the river, invested with plenary powers, and allowed to deal summarily with cases requiring immediate action, would, if he did his duty, be the means of preventing much of the sickness (and consequent mortality) which now prevails from time to time amongst the shipping. Who is *now* responsible for the welfare of the ships' crews? The river practitioners have no official status. They may *recommend* sanatory measures to the owners and captains of vessels, but who can *insist* upon their being carried out? An *unofficial* surgeon may urge that one of the ship's hands about to be attacked by cholera—nay, who may be in the first stage of the disease—should be sent to one of the hospitals in the town; but what if the captain refuse? The man may be dead before night; but does anything happen?—is there any enquiry?—is anybody hanged?

We are not writing without grounds for what we write. Such things *have* happened, and they *will* happen, again and again, until the arm of the law—in the shape of a Port Surgeon—is extended over the Hooghly. Human life is too precious to

* The regiment was in perfect health when at Fort Benares.—Ed., I. M. G.

nation who comes into the port, and in the sanitary condition

should do into the drains of the town: he must have an execu-

We

serious subject; but we would add, in conclusion, to allay the

creation of a Port Surgeon will in no way interfere with them. The tax of nine pie per ton on every vessel is far more

will send all their really sick to hospital. They will not like to pay *twice over*. Indeed, we have heard of an instance in which a river practitioner has actually received his "notice to quit" on this ground. But we would caution owners against being too premature. The hospital accommodation in Calcutta is not so abundant that they will always be able to secure admission for "Jack." No; more hospitals are urgently required. Meanwhile, we would say to our river friends—

generation; you are not yet reduced to the condition of

CIVIL SURGEONS IN INDIA

at the present time, are Civil Surgeons. Their work, like that of Sisyphus, seems never to come to an end. Report succeeds

lunatic asylum, and dispensary, besides the charge of out-

the Inspector-General of Prisons, the Deputy Inspector-General

expect the usual periodical reports (some of them in duplicate), and information must be furnished, who never called for, at any time, by any of the above-mentioned authorities. Civil Surgeons are the *back-bone* of the service. They supply the *pabulum* for

requirements of the country; but their energies are over-taxed; and they are crying aloud for help!

Bengal Government for a *writer* to be allowed to the office of a Civil Surgeon. We earnestly trust that the request will be

Bengal only, but for all India.

We have used the term office somewhat prematurely—for Civil Surgeons have none. Yet, they *should* have one, together with a record and work of reference. The medical government of the country in the civil department is now assuming considerable importance, and the days are past when it was sufficient for a Civil Surgeon to keep copies of circulars in his book of country

of Dr. Mouat's "Annual Jail Report," and receiving the reply that he did not require the work, as he had no office!

We venture earnestly to urge upon those in authority the necessity for providing civil medical officers with an office and a writer.

THE SUBORDINATE MEDICAL DEPARTMENT.

chair), with a view to resuscitating the extinct Sub-Medical Widows' and Orphans' Fund. A copy of the rules proposed for the fund is also given.

Before the fund can be brought into operation, the opinion of an actuary must be taken; a thousand rupees will secure this from the gentleman who communicated with the promoters of the scheme a few years ago, who has already received a like amount, and who is prepared to give the required information for the remainder. Let this be done at once.

subject. We are aware that *many* will decline to subscribe *unless* the fund be made a Government institution. What the answer

present is not a favorable time to ask for Government support,

with. At the same time, the Court of Directors promised to accept the responsibilities of this particular fund in the event of

possible that a consideration of this promise may have weight.

sanguine friends.

NATURAL AND PHYSICAL SCIENCE IN INDIA.

On Thursday, the 19th ultimo, the Hon'ble Justice Phear delivered a lecture, at the usual monthly meeting of the Bethune Society, in the theatre of the Medical College, on the "Periodic Rains and Winds" of the Calcutta seasons. The lecturer disavowed any intention to instruct his audience, but he wished, he said, rather to serve as a pioneer to those who were willing to cultivate the paths of science in earnest, and to shew what treasures were in store for all acolytes, however humble, in this department of knowledge. So far, however, as it went, the lecture conveyed information, and was gracefully delivered; but (we say this in no spirit of hypercriticism) it lacked lively illustration. No allusion, for example, was made to those great convulsions of nature which occasionally visit this country and carry such frightful desolation in their wake—viz., cyclones. The causes of heat and cold in Europe and the tropics were *comparatively* discussed and explained, together with the theory of the trade winds, and the reasons why one wind conveys moisture and fertility into countries, whilst another leads to barrenness and famine.

But the great point which attracted the attention of all—of the audience as well as of those who addressed it—was the paramount necessity which exists for adding to our university curriculum a course of study by which the young men of the day should acquire a knowledge of natural science; and the chairman greatly gratified the meeting by stating, at the close of the evening's proceedings, that the council of the Asiatic Society had moved the Government of India to cause the valuable collection of natural history in the Indian Museum to be made available for university education. This is, in fact, the tendency of the age. At some of the schools in Germany natural science is taught; it has been introduced into the curriculum of study at more than one English university; and at one of our most rising public institutions in England—Marlborough (the modern school)—the boys are instructed in botany. Nothing can exceed the value of such knowledge, especially when taught in early life. Not only is a love of the country engendered, but the analytical powers of the mind are developed, and a resource, of the purest kind, obtained. Why should such knowledge not be taught in India—aye, made compulsory? Mr. Woodrow, in explaining the reason, reminded us of the subaltern who, unable to fire an important salute, gave as his chief reason that there *was no gunpowder*. Mr. Woodrow stated that the university had *not* lost sight of the subject, but no teachers were to be found. Now, we venture to say that, if sufficient inducements are held out, there will be no lack of teachers. All medical men who come to India know more or less of science. Let but a proper salary be offered, and it will be abundantly cultivated—for the benefit not only of the pupils, who may be then *compelled* to take it up as a branch of study, but of the country at large. Or, let professors of natural science be imported and added to the educational staff. A little expenditure of money will soon remove the objection raised by Mr. Woodrow.

Mr. Phear is a genuine friend to the natives of this country, and he will have added another to the many laurels he has gained from them if his lecture—which is the subject of this article—shall in any way lead to the cultivation of natural science amongst his Aryan brethren. The mantle of Prince Albert has descended upon the shoulders of Justice Phear.

Short Notices of Recent Books.

On the Parasitic Affections of Diseases of the Skin. By Dr. M'Call Anderson, Lecturer on the Practice of Medicine in Anderson's University. 2nd Edition. London: Churchill, 1868.

So much attention has recently been given by such men as Lêmaire in France, and Salisbury in America, to the study of the relation between fungi and disease, that Dr. Anderson has done wisely in bringing out an improved and advanced edition of his treatise. In the present issue, the text has been nearly entirely re-written, and the number of illustrations has been considerably increased. The first part of the work is devoted to vegetable, and the second to animal parasites of the skin. The work is altogether divided into 16 chapters; of these, the first is devoted to a general sketch of the subject and a reference to the more recent scientific researches in skin affections; the 2nd, 3rd, and 4th deal with tinea favosa; the 5th with tinea tricophytina, or ringworm; the 6th with tinea circinata; the 7th with tinea sycosis; the 8th with tinea tonsurans; the 9th concludes the subject of tinea tricophytina, begun in the 5th; the 10th treats of tinea versicolor; the 11th of alopecia areata; the 12th of the distinctions between the foregoing species; the 13th gives a classification of the animal parasitic affections; the 14th describes scabies, the description being continued in the 15th; and, finally, the 16th includes an account of the bug, flea, chigoe, guinea-worm, and the acarus folliculorum. Among the many interesting matters discussed by the author, there is one which is at the present moment especially worthy of notice; that is, the question whether *alopecia areata*—or *tinea decalvans*, as it is more commonly described—is, or is not, a parasitic disease. Dr. Anderson gives a short analysis of the opinions of the most recent observers, and points out that this affection is decidedly contagious, and that children affected with it should be separated from their fellows. He then expresses his belief that the disease is not connected with a fungus. He states that he has himself made a great number of microscopic examinations of the hair and scales taken from cases of *alopecia areata*, and with every expectation of finding a parasite, for the disease presents all the other characters of a parasitic affection, and yet in not a single instance was he able to detect a trace of tubes or spores. He has observed, however, that the bulbs were atrophied; that the little stumps of hair frequently met with on, and in the vicinity of, the bald patches, often presented dilatations, as alluded to by Bazin, but without any [illegible] to account for them; and he has also noticed that at their broken extremities the fibres projected in a ragged manner, like the broken end of a piece of wood. While he thus publishes his own negative observations, the author admits that the disease presents all the external features of a vegetable parasitic disease. He is nevertheless disposed to look upon it—as Wilson does—as a species of neurosis. But apart from this special branch of the question is the much larger one raised by Wilson, as to whether so-called skin diseases of parasitic origin have really anything to do with parasites at all. Wilson alleges that all the growths which have been called fungi are nearly anatomically metamorphosed animal structures, and he has written a very clever article in support of this in the *British and Foreign Medico-Chirurgical Review*.

On the other hand, Dr. Tilbury Fox holds the opposite view. Dr. Anderson very fully discusses these questions also, and he inclines to the belief not only that these diseases—alopecia areata excepted—are due to a vegetable parasite, but that the [illegible], the *microsporon Sabouraudi*, and the *microsporon furfur* are all three distinct species. For the arguments adduced, we must refer our readers to the book itself; and we must conclude our notice by thanking Dr. Anderson for a treatise as practical as it is scientific, and whose exquisite illustrations and marginal notes are luxuries seldom met with in medical works.

A Treatise on Physiology and Hygiene. For Schools, Families, and Colleges. By J. C. Dalton, M.D., Professor of Physiology in the College of Physicians and Surgeons, New York. London: Sampson, Low, and Son, 1868.

Dr. Dalton is well known in America as a successful teacher, and as author of a large treatise on physiology, which has commanded, at least in its earlier editions, a very large circulation. The book before us is spoken of as a work on [illegible] and [illegible]; and it is [illegible] well "get up." We were almost disposed to give it a cordial welcome to the bookshelf medical

United States.

and Co., 1868.

observation are dependent for their action on optical princi-

who have just half-mastered a branch of science. This is what we think in Mr. Nugent's case. The author has in some measure made himself familiar with the elements of optics, and in his triumph he sits down and composes a work for less fortunate students. But he has forgotten that teaching is itself an art, almost complete ignorance of the art, we are not likely to produce a satisfactory result. The medical part of the book is phenomenon of accommodation is enough to drown the whole work. He says:—"I am strongly inclined to think the eye adapts itself to different distances by a sort of galvanic or electric action, induced in it by its stimulus of light proceeding from external objects, the force of this action depending on the distance from which the light proceeds, the intensity of the light," etc. sample of a work which many will think very scientific.

F.R.S. October, 1868.

continues his lectures on skin diseases, in the present one (the the original communications of special interest may be men- "Chromidosis" by Dr. Pardon, on "Arsenic on the Skin" by Mr.

This journal continues to devote itself to purely therapeutical

"the interception of the epileptic aura by blistering," by Dr.

English Correspondence.

intervention. The schools have all commenced work, the societies

ing very materially from each other. Dr. Sandwith is a practical man, earnest in speech, energetic in action, anxious for reform in medical institutions, but not desirous of any very sweeping or radical alteration in the present state of things. He would in general politics, of course, support Mr. Gladstone; medical institutions, would render him a useful representative of medicine in the House of Commons. Sir Dominick Corrigan every one knows. He is a man of much ability, and of no but, on the whole, anxious to further professional interests, and capable of expressing his opinions fearlessly. He would certainly "occupy the time of the House" very frequently. Your correspondent thinks that Dr. Sandwith would be the more useful member of the two, and he regrets, therefore, that he has the lesser chance of being returned. Dr. Sandwith's committee includes the names of many physicians, philosophers, and *littérateurs* of distinction, but the former members are, I of his "return."

The number of new students who have commenced the study of medicine in London is an average one, but the entries at each of the schools shew that certain schools, hitherto popular, have, through some mischance or mismanagement, lost their reputation. The registry closed on the 15th, when the numbers College, 60; King's College, 39; London Hospital, 35; St. Thomas's, 24; St. George's, 23; Charing-Cross, 20; St. Mary's, King's College is far below University; that "London" stands nearly equal to the latter; that St. Mary's, which used to stand (of late years) next to King's, is now below St. Thomas's, St. George's, Charing-Cross, or Westminster; and that, finally, the Charing-Cross, which had hitherto a very small entry, is "looking up."

The new arrangements as to furlough in your medical service have given rise to great dissatisfaction here. Referring to Sir John Lawrence's decision, that medical officers of native regiments are to be the only English officers of the Indian service who are forfeiting their appointment, the *Lancet* very justly observes:—"We cannot understand why such distinctions as these should be made, and invariably to the prejudice of the medical officer. Surely the present head of the Indian Medical Service must have represented to the Governor-General that an injustice was being inflicted on his department. When a man has served continuously for ten or more years in one regiment, in a country so far away as India, he naturally views his appointment to a new corps as a great hardship." It further observes that the only contented medical officers of the Indian service are the few who occupy good civil appointments in Calcutta and elsewhere.

The first meeting of the Clinical Society was held the other night under the presidency of Mr. Paget, who delivered a very able introductory address on the occasion. The papers read were not of striking importance, but one of these, by Dr. speech from Dr. Wilson Fox, in which the speaker deprecated the tendency to erect what is called *fibroid phthisis* into a distinct form of disease. So far as negative argument went, Dr. Fox had much weight with the members. Dr. Andrew Clarke, tuberculosis, was not present, but he is expected to say a word or two on his views to-night. The meeting was held in the rooms of the Medical Society, and was attended by more than 200 members, thus proving how popular this young association meeting last week; Dr. Richardson, as usual, presided, and read than the modern opinion, since he regards bloodletting as advantageous in many febrile conditions, and in most forms of inflammation. I think there are very few pupils of the new school of medicine who will admit his theory, that, in drawing off the

I shall not prejudge Dr. Richardson's views; the paper will appear in full in the forthcoming (November) number of the *Journal*, and will, I doubt not, lead to a considerable debate on the subject between the representatives of the modern and [illegible] medicine.

Will the University of Edinburgh elect Mr. Gladstone as its chancellor? This is even at the present time a question impossible to answer. The hopes of the profession generally throughout the kingdom are centred upon the leader of the Opposition, but there are numbers of local clique bound to support his opponent. It seems to me that it would contribute more to the advancement of the university to be represented by a man of Mr. Gladstone's status and ripened experience, in both political and purely educational questions, than by one whose opinions—from his direct connection with the university—must naturally be narrower and more one-sided. Time only can settle this point, [illegible]

The [illegible] controversy between the *Saturday Review* and the *Lancet*. In a recent article, the former made some very disparaging and, indeed, [illegible] remarks on the [illegible] of the Registrar-General and Dr. Frankland. The *Lancet*, in its last number (17th instant), takes the subject up, and in an article of great scientific ability and much scholarship it satirizes the efforts of its contemporary, and, I think, demonstrates satisfactorily that the writer knew nothing of his subject, and wrote with the sole object of [illegible] of our most [illegible] scientific satisfactories.

Scarlatina, I am sorry to say, prevails to a somewhat alarming extent in the metropolis. The wonder is that its ravages are not even more serious than those recorded in the Registrar's returns. Notwithstanding our numerous medical officers of health, the hygienic condition of London can be expressed only in one word—abominable. The reason of this is that there is no sanitary department in our government in direct connection with the body of medical officers. Hence, the latter are compelled to take the only course open to them, and do what work in their parishes the vestry will allow them to do; and, as a rule, it is the [illegible] In other words, the less work a medical officer makes, the more acceptable is he to the vestry: the latter body containing, doubtless, many sanitary delinquents.

[illegible] to be properly [illegible] in the Medical Council? The problem remains for the council of the British Medical Association to solve, and no doubt at its meeting, which is now near at hand, something definitive will be arrived at in reference to the course to be taken to obtain representation. As at present constituted, the General Medical Council is a most abnormally constituted corporation. It has nearly unlimited power over the general conduct of the profession; it annually extorts large sums from young medical men, who can least afford to pay so heavy a tax; it has done nothing for the profession which could not have been achieved at about one-tenth of the money and in half the time it has expended; it is composed of representatives from medical corporations which care not one jot for the interests of medical men in general, and of a few governmental members, who are equally unadapted to consider the needs of the practitioner. Under such circumstances, it would be but the basest justice to enact that the profession at large should annually, or at longer intervals, send in to the council its own chosen representatives; and we believe that, [illegible] over pharmacopœias, and the lavish expenditure of funds which characterise the existing Medical Parliament. Indeed, this question has already attracted so much attention, that Mr. Campbell Swinton, one of the candidates for the representation of Edinburgh and St. Andrews, in a letter to Dr. Andrew Wood (October 8th), expresses his willingness, should he be elected, "to give a favorable consideration to any well-considered plan for attaining this object, which may meet the wishes of those immediately interested in the question."

[illegible] result of the last meeting was to refer the consideration of the question of raising the subscriptions to a committee. So the [illegible] to mar the prospects of the club, for with its handsome new [illegible]

You will be glad to learn that the *Indian Medical Gazette* is now [illegible] in India; and its leaders on questions of social or military [illegible] other [illegible]

Progress of the Medical and Collateral Sciences.

Physiological Action of Quinine.—At the meeting of the "Académie des Sciences" of Lisbon on the 19th of October, Dr. Bazo, at Berlioux, made a statement that quinine diminishes the viability of the white globules of the blood, and prevents them from passing through the vessels in cases of inflammation.

Action of Mercury as a Cholagogue.—At the Oxford meeting of the British Medical Association, Dr. Hughes Bennett presented a report containing the results of a series of experiments on dogs. A biliary fistula was established in each case, and mercury afterwards administered. The general [illegible] from these researches are: (1) that in poisonous doses mercury produces similar effects on dogs and on men; (2) that in large doses it distinctly diminishes the amount of biliary secretion; while in moderate doses it produces no perceptible effect on it.

The most important objection to the above conclusions was that the experiments had been made on *healthy* animals; and that, although mercury might have similar effects if administered to *healthy* men, it was impossible to infer from those experiments what effect the drug would produce on men [illegible]

The Principles of Anæsthesia, and the Anæsthetics of the Present Day.—At the same meeting Dr. A. E. Sansom [illegible] that the action of anæsthetics, so far as really useful, depends on their depriving the system of oxygen. The evidence does not warrant the belief that they have any direct action on the central sensory ganglia. They stimulate the cardiac and vaso-motor systems, contract the systemic arteries, and force the blood into the venous system, which becomes gorged. The great danger attending the use of chloroform—that of *paralysing* the cardiac and vaso-motor forces—may be avoided in a great degree by cautious dilution of the vapour, especially if the chloroform be mixed with an equal amount of alcohol. Nitrous oxide is, in *skilled* hands only, a valuable agent for short operations, such as those of [illegible] but should not be given in cases of pulmonary, cardiac, or cerebral affections.

Vesicles of Herpes and other Diseases.—At a recent meeting of the Academy of Sciences, Vienna, Mr. Rokitansky presented a paper from Mr. D. Haight, of New York, on the vesicles formed in certain morbid conditions of the skin. Those of herpes and erysipelas are partitioned, and the elements of the partitions are furnished by the cells of the median portion of the malpighian net-work, drawn out into lengthened fusiform cells, or into threads analogous to the fibres of conjunctive tissue. Herpes zoster developes a profusion of cells in the corium, which, clearly defined, extend along the nerves into the depth of the sub-cutaneous conjunctive tissue. In erysipelas of the head, an exudation takes place into the interior of the hair follicle, in consequence of which the root matrix of the capillary stem becomes detached from the membrane, which is devoid of follicular structure; the latter exhibits, on its interior surface, numerous spiniform projections. The vesicle of pemphigus is simple, and bounded by the detached portion of epidermis and the upper malpighian layer. The exuded matter interposes itself between the cells of this layer, without perceptibly lengthening them. The ampulla of Purpura (Friesel) is confined on both sides by the epidermic scales, and a widened duct from a sweat gland opens into each ampulla. They result from an excess of secreted sweat, bursting the sweat duct, which extends into the epidermis in corkscrew form, and spreading in the interstices of the epidermic layers.

Carbolic Acid as a Remedial Agent.—Dr. W. Rempster, [illegible] on this subject. He has found this agent valuable in cases of catarrh, when the discharge is profuse and offensive. Inhalation is the process *adopted*, one grain of crystallized acid being used to the ounce of water. After one or two inhalations the fetor is diminished, and the character of the discharge is altered. It is also useful in simple tonsillitis.

Sulphites in the Treatment of Fevers.—Dr. A. C. Simonton, [illegible]

[redacted]

[redacted]

[redacted] lines the sulphate with opium or hyoscyamus, and advises the [redacted] mittent fevers.

The Pathology of Red Lobular Exudation.—[redacted] He states that the epidermic cells, accumulating in larger [redacted] matter. Those of the malpighian stratum, more or less accumulated, locally send compact long and wide processes into the interstices of the papillæ. At certain points brown-tinted cells are accumulated round the papillæ, which are enlarged and filled with elastic filaments. The blood-vessels distinctly enlarged travel in serpentine curves through the deep layers of the corium, and are accompanied by a great abundance of cell [redacted] number of the cells are accumulated at the base of the capillary follicle, where they form regular conical processes, composed [redacted] appearance of a gland. The follicle thus is widened, and the root of the hair is, as it were, truncated at its base. The inflammatory process, according to Herr Neumann, takes its origin in the wall of the hair follicle.

Compressed Air as a Therapeutic Agent.—M. [redacted] Burdon-Sanderson in the *Practitioner* for October, this mode of cure is being extensively adopted in Bavaria, where, in the little town of Riechenhall, an extensive establishment, under the superintendence of Herr Dr. Liebeg, is now in full swing [redacted] peutic means has been not so successful in France as it has been in Germany. It would seem from Dr. Sanderson's observations that the effect of the compressed air on the action of the heart continues for a considerable time after the patient has left the bath or air-chamber.

The Value of System and Routine in the Study of M[redacted]

Physiological Action of Arsenic.—An important work has [redacted] that those interested on the point may obtain the book for them- [redacted] Lolliot, Paris.

Variations in Human Myology.—The last number of the [redacted] panied by a large tabular chart, in which the several muscles found to vary are enumerated, and the nature of the variation is [redacted] in male subjects. In 18 males there were found 296 abnormal- [redacted] right side only, and 61 on the left side only; making 123 single, or one-sided specimens. Of the 262 variations found in 18 females, 138 were found on both sides, 55 on the right side only, [redacted] specimens, and giving rather fewer in the right, and more in the left in females than in males. This is found to depend on the [redacted] the females to 125 in the males; while the number found in the *left* arm only of the females is 51 compared with 38 in the males; [redacted] compared with 36 in the males; on the other hand, the number found in the left leg only in the female is but 10 in comparison with 13 in that of the male, and with 20 in the right leg only of the former sex.

A Novel and Useful Camera Lucida for the Microscope—[redacted] manufactured by Mr Charles Collins, optician of London. In using the ordinary camera lucida, or even the tint-glass reflector, the observer is obliged to place the body of the microscope in the horizontal position. It is therefore impossible to use this instrument with objects such as animalculæ, &c., which are freshly mounted in fluid. To obviate this, Dr. Colles suggested the use of a right-angled tube, containing a right-angled prism in its angle, and fitted to the body of the microscope between the object-glass and the eye-piece. Mr. Collins has constructed [redacted] s on this plan, and Dr. Lauson, who describes it in the *Popular Science Review* for October, speaks of it in high terms of praise. It can be conveniently used with either the 1-inch or ¼-inch objective, absorbs very little light, and allows the *stage* to be maintained in a perfectly horizontal position.

The Clinical History and Pathology of Herpes Zoster.—Herpes zoster is one of those diseases which it is difficult to place definitively in any one category. Some make it a skin disease, others a neurosis. One of the fullest memoirs we have seen upon it is that which appears from the pen of Dr. John Duncan, in Wilson's *Journal of Cutaneous Medicine* for October. The writer gives his own opinions, and summarises the views of nearly all who have written upon the affection. He then concludes with an account of his own personal observations in 23 cases, seen within three years. The disease was invariably unilateral ten times on the right, and thirteen on the left side of the body. Fourteen of those attacked were females. In thirteen the eruption appeared in the thorax, in six in the abdomen, in two in the thigh, in one in the neck, and in one in the forehead. The pain was always severe, but was allayed by opiates. Starch, oxide of zinc, camphorated chalk, &c., were applied to the vesicles. The writer of this abstract having had, not long since, a severe attack of herpes zoster, following the course of one of the intercostal nerves, may perhaps be permitted to state the mode of treatment he employed with the most excellent results. The moment the vesicles appeared, they were covered over with a thick coat of collodion flexile of the British Pharmacopœia, which was also now and then re-applied to fill up cracks in the dry layer. This nearly entirely removed the burning sensation. The neuralgic pains were completely alleviated by a hypodermic injection, morning and evening, of one-sixth of a gram of hydrochlorate of morphia. He has since tried this mode in two other cases, and with equally satisfactory results.

An Extraordinary Human Monster.—[redacted] described an extraordinary monster, which is now living, and, though an infant, bids fair to reach maturity. It has four legs and two distinct female organs of generation, with two external openings of the urethra, and two external openings of the double rectum; the water and fæces are passed simultaneously from the two sets of apertures. The head and trunk are those of a well-developed, active, healthy infant of 5 weeks, whilst the lower part of the body is divided into the members of two distinct individuals near the junction of the os sacrum with the spinal column. "It now nurses healthily, is thriving well," and, when last seen by the professors, it urinated simultaneously in the two pairs of labiæ of the two vaginæ, which are about six inches apart. The outer legs of both sides are the most natural of the four (though one of them is clubbed), but are widely separated by the two supernumerary ones, which are [redacted] this infant reach maturity," say the professors, "and the internal generative organs be double, there is nothing to prevent conception on both sides." The first difficulty will, however, be in her walking; the outer, or external legs may be used for progression; the inner or in-turned ones probably never. These might be successfully amputated at the knee, or higher up.

THE

Indian Medical Gazette,

A MONTHLY RECORD

OF

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AND THE

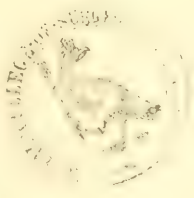
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AND OF

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ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE ACTION OF SNAKE-POISON AND ITS ANTIDOTE.

CONDUCTED AT THE GWALIOR RESIDENCY,

IN THE PRESENCE OF

COLONEL C. L. SHOWERS, *Officiating Political Agent;*

AND

DR. J. MACBETH, *Superintending Staff Surgeon of Morar.*

To JOSEPH FAYRER, ESQ., M.D., M.R.C.P., Lon., &c., &c.

DEAR MR. FAYRER,—I have been much interested in reading, from time to time, the published accounts of your own and Dr. Shortt's experiments on the action of snake-poison.

There is a man here, a native, who possesses what he believes to be a specific antidote. I was led to institute experiments for its being tested by accidentally witnessing its efficacy in the case of a woman who had been bitten by a venomous snake.

The following record of facts and experiments which, by the kind and skilful co-operation of Dr. Macbeth, Staff Superintending Surgeon of Morar, I am able to lay before you, will place you, and any other professional gentlemen whom you may think proper to associate with yourself in the enquiry, in a position to judge whether a specific antidote to snake-poison has been found. It is naturally an object of universal importance. The native has communicated his secret to me, and desires to proclaim it. But, before doing so, all I wish is that the antidote, after being subjected to every test that can be devised, and to which I am prepared to submit it, shall be admitted by competent professional authority to be really a specific antidote for snake-poison, in order that I may present it as a boon to the world.

The case of the woman above referred to, as having brought the man and his antidote under my notice, occurred on the 1st August last, and may be narrated as follows:—

A report being made to me that a woman, living in a village adjoining the Residency, had been bitten by a snake and was dying, I sent for the Residency Surgeon, and walked over myself at once, attended by a servant, with brandy, in the hope of being able to afford assistance. On arriving at the scene of the accident, I found the woman seated on the ground outside the door of her hut, under a sort of unprovided porch formed of branches and leaves, which the villagers had erected at the moment to afford the woman air without exposure to the sun. She was suffering from a recurrence of swooning fits, having already had eight previous to my arrival, in the interval of about two hours since she was bitten. The marks of the bite were distinctly visible on her ankle.

While waiting for the surgeon, one of the swooning fits recurred. The method resorted to by two men who were treating her was what is known among natives by the term *jharna phookna*, or to exorcise. I had never witnessed it before. It was a strange and painful spectacle. As soon as indications of the approaching swoon appeared, and the woman bent forward from her sitting posture insensible, one of the two men seized her head across the forehead and temples with one hand, the other hand supporting her head behind, and then commenced shouting some *muntras*, or charmed verses, into her ear, at the very top of his voice; the other man, seated on the opposite side, taking up the last note of each cadence and prolonging it with an indescribable howl, with his mouth close to her ear. After this had been continued for some minutes without any sign of returning consciousness, the man who was supporting the woman by the head commenced shaking her violently, and slapping her and rating her vociferously, in apparent anger at her obstinacy. After some time this had the desired effect, as slowly, with convulsive gasps and other symptoms of distress, she came to herself.

In the interval a man had arrived on the scene, who at once assumed—and was tacitly admitted by the bystanders to do so—the treatment of the case. He quietly put aside the charmers, reassured the woman and her relatives with an air of perfect confidence as to the safety of her life, and pounding something on a stone, he administered it to her. We then left, directing that a report of the progress of the woman's case should be made from time to time. In about two hours another swooning fit was reported—the previous ones having recurred at intervals of about a quarter of an hour. Subsequent reports announced her steady progress and complete recovery. That night she was kept forcibly awake by the instructions of the man who had administered the antidote as a precaution, on account of the long time she had been under the influence of the snake-poison before he was called in.

This case led me to make enquiries about the person who had treated it so successfully, and I sent for him. On questioning him as to the nature of his antidote, he was very reserved at first; but on my offering to take him into my own service, he grew more communicative. He subsequently entered my service and revealed to me the secret of his antidote, giving me some of the material. So confident was he in its efficacy, that he offered to allow himself to be bitten by any snake; but this was a test that it hardly required the fatal example of Mr. Drummond's case at Melbourne to place out of the question.

enclosure.

transmit it to you. The delay, however, has proved of material

from the effects. Hearing, he added, that there was a person in my employ who could administer relief, he had come to seek it. I sent back my servant with him. He administered

in the evening, had brought her round.

The following morning I sent to enquire how the woman was, and desired that if quite recovered, her husband, the carpenter, and herself should appear at my office. They duly came the same day. The marks of the bite were distinctly visible on the

moonshee, and append a translation of it, which will be found at the end of the record of experiments.

The importance of the subject may be gathered from the fact recorded in the last Oude Administration Report, that 1,127 persons died from snake-bites during the past year, and, again, in the Central Provinces Administration Report, that 1,874 had died from the same cause during the three preceding years. These figures, referring to isolated districts of India, may afford some approximate idea of the mortality arising from this cause throughout India and all other serpent-infested countries of the East.

be established, could hardly be over-estimated.—Yours very truly,

C. L. Shortrede.

1. A

from one thigh and partially off the breast, the bird was freely bitten more than once in our presence by a lively cobra, over four feet long. The cock showed no symptoms of distress of any kind, and, after an hour, was let loose, and ran about apparently uninjured. Did not at any time subsequently exhibit

2. A rabbit would not have the antidote administered by the *kelaree*, whose hand he bit severely in the attempt to do so. The rabbit was then twice bitten by a cobra over four feet long, on each occasion giving vent to a painful cry. It was then let

showed great distress,—hurry and irregularity in its efforts to breathe; heart's action became rapid, feeble, and irregular; the pupils of both eyes were violently acted on by some foreign

shoulder and was dead.

3. A full-grown pariah slut, seemingly in perfect health, was handed over to the *kelaree*, who administered his antidote on a piece of meat, which the slut swallowed in our presence at 8-39 a.m. She was then bitten on the inner side of the left thigh by a fresh cobra over four feet long, which closed its jaws upon the place, holding on for some seconds. Several other attempts were made to make the cobra bite again, but it is not certain whether a second bite was given or not. The slut was then tied up; meat was offered to her about an hour afterwards, at the instance of the *kelaree*, which she refused. He subsequently gave this as a reason why he thought his antidote had not been quite powerful enough, but said confidently that the remaining effects of the poison would pass off in a few hours. The slut showed no symptoms of distress nor lethargy for two hours, after which she lay down and appeared drowsy. The *kelaree* then administered a second dose of his antidote, which, in the course of an hour, entirely dissipated all drowsiness and weakness. At 1 p.m., the slut, having been for about an hour and a half lively and apparently well, was let loose, and ran away to the neighbouring village to which it belonged.*

4. Another dog, full-grown, in good condition and apparent health, was bitten at 8-48-50 a.m. by a cobra over four feet long, the snake closing its jaws upon the place. Strong symptoms of uneasiness after 3 minutes, with very hurried and spasmodic breathing; pupil of eye violently acted on. In about 15 minutes action of the heart much enfeebled, and very hurried. Pupil of eye still more, evidently under a foreign influence; very shortly after this the breathing became more hurried, and the animal very restless. Frothy saliva also began to flow freely; *kelaree* asserted the dog would go mad. Shortly afterwards, on putting anything within reach of his mouth, he snapped spasmodically and laid hold of a rope, but more convulsively than with any object. First effects seemed to be excitement and distress, followed by considerable lethargy, after which its muscular efforts appeared to be nervously spasmodic, excited by some foreign influence, and evidently not voluntary. The hinder extremities first appeared to lose power; action of the heart hurried, weak, and intermittent; about this period the pupil of the eye became fixed, lower jaw powerless, tongue lolling out, and of a bluish black color; and breathing distressed, hurried, and spasmodic, with only partial expansion of the chest. Died easily, after one or two slight spasmodic gasps, at 9-29—that is, in 40 minutes and 10 seconds after being bitten. Just before death it showed a dislike to the presence of water.

1. Pariah dog, without antidote, bitten at 7-39 a.m. Bitten twice on right leg and inner part of left thigh, on both which occasions he gave tongue as if in pain. In about 10 minutes afterwards the same appearance in pupils of eyes as in the previous experiments. In about a quarter of an hour strong convulsions, with involuntary evacuations of the bowels, and subsequently, at intervals; made violent attempts to bite everything within reach, including his own legs and tail. This the *kelaree* described as a symptom of hydrophobia, or his idea of dog-madness; shortly all struggles ceased, the power of motion seeming first to leave the posterior limbs. A good deal of viscid saliva flowed from the mouth, and, as before, the tongue was

observed being out, livid in appearance. The circulation in this case became more gradually affected than in the previous experiments; the heart's action continued for 6 minutes, gradually becoming feeble, after all pulsation in the arteries had ceased. Died at 8-15 a.m.

2. Second dog, without antidote, bitten at 7-54-58; died at 8-23-30—that is, in 28 minutes 28 seconds,—exhibiting more or less the symptoms recorded in the foregoing case.

3. Third dog, with antidote previously administered, bitten at 8-13 a.m. Remained quite unaffected, and, being kept tied up for three days, did not exhibit at any time anything wrong.

4. Fourth dog, with antidote, bitten at 8-39 a.m. Remained quite unaffected, as in the foregoing case.

5. Previous to this experiment, the *kelaree* asked whether the fresh snake should bite a prepared or an unprepared animal. We selected the former in this instance, having already seen two dogs die, Nos. 1 and 2.

A prepared full-grown pariah was then bitten, the first time at 8-57 a.m., and a second time at 8-57-30. Both times the jaws were firmly closed on the limb. The *kelaree* says that it was bitten a third time before the snake was disengaged from the dog, but we saw only the two bites above recorded. The dog remained perfectly unaffected after two hours, when the *kelaree* was told to take all three dogs away to his house, report their state in the evening, and, if alive, to bring them up to the Residency for inspection the next morning.

The *kelaree* reported in the evening that the dog last bitten —twice as we saw, but three times as he affirms—had vomitted at 3 p.m., and exhibited other symptoms of distress; and that he had in consequence administered to this dog more of his antidote, and that it was doing well.

The following morning, that is, in 24 hours after being bitten, exhibited great weakness and distress, and decided symptoms of being under the influence of poison. We thought it would not recover, but the *kelaree* appeared confident it would. Antidote was again administered; grew better and stronger towards the evening, and the following morning—that is, in 48 hours after being bitten—had quite recovered. It was kept tied up a third day, when all three dogs, in perfect state of health, were let loose.

Third day, 12th September, 1868.

Experiment with one and the same cobra biting two full-grown pariah dogs in succession, at an interval of a quarter of an hour; the first being prepared with the antidote, the second without. This experiment was tried to afford an *à fortiori* test of the efficacy of the antidote.

1. Prepared dog bitten at 7-42 a.m., the cobra closing his jaws twice upon the part. Remained quite unaffected, apparently, for four hours, after which began to exhibit symptoms of distress, with increasing weakness. The following morning too weak to stand, tongue beginning to exhibit signs of paralysis, and becoming dark colored. Antidote was again administered; towards evening strength returned; dog eat food. Second morning—that is, in 48 hours—quite recovered; was kept tied up for a week, never at any time exhibited any return of symptoms.

2. The other dog, in natural state, that is unprepared, was bitten by the same cobra at 7-57 a.m. in two places,—on the back, and in the line of the spine. At $8\frac{1}{2}$—that is, in 33 minutes—it began to show symptoms of being under the influence of poison. All the symptoms noted in previous experiments developed themselves, such as affections of the pupils, convulsive twitchings of the jaws and limbs, paralysis of the tongue, with gradually increasing swooning and inanity, sluggish circulation, and feeble heart's action. In this instance there was but little struggling or violent convulsions in comparison with the other cases noted. Died at 9-5; that is, in 1 hour and 8 minutes.

Deposition of Dawe, Carpenter, residing in Ghaspoora, of Gwalior. Taken 3rd October, 1868.

This woman, by name Jusoda, is my wife. Yesterday she was bitten by a snake on the fourth finger of the right hand, about 8 a.m. Blood flowed from two wounds. We adopted the usual remedy of *jharna*, or exorcism, and, by making a great noise, tried to prevent her from going to sleep, but without success. She soon became speechless and insensible. Having heard that the Political Agent had a person in his employ who could cure snake-bites, I came to the Residency to seek aid. The Political Agent sent his servant back with me. He gave my wife some medicine in *dhye* (curded milk), which revived her, and she recovered, and the anger of the deity was appeased.

(True translation.)

(Sd.) PIRTHEE NATH, PUNDIT,
Translator of the Gwalior Agency.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

BY J. FAYRER, M.D.,
Professor of Surgery, Medical College of Bengal.

(Continued from Vol. III., page 267).

PRESENT: Dr. Fayrer and Mr. Seeva.

EXPERIMENT No. 1.

12th December, 1868.—A small Cobra, about sixteen inches long, was bitten in two or three places, about one-third of its length from the tail, by a very large, powerful, and vigorous Cobra of the spectacled variety. The fangs penetrated deeply, and there could be no doubt that the venom was freely injected. When bitten the young snake threw itself into a series of momentary curves, but on being released it appeared unaffected.

It was closely watched for some time, but showed no sign of being affected. It was as active and vicious as before, assuming an aggressive attitude, with its little hood erect, and striking vigorously at anything that approached it.

It was bitten at 11-45 a.m., and I saw it again at 4 p.m.; it was then lively, but looked rather stiff, and disinclined to be so active as it had been, probably owing to the pain and commencing inflammation in the bites.

On the 13th, at 5 p.m., there was no apparent change in the snake; it was as lively as ever.

14*th*, 2 *p.m.*—Mr. Seeva reports that, beyond a slight apparent weakness in the muscles of the bitten part, there is no change. The snake remains quite well.

EXPERIMENT No. 2.

A small Cobra, one probably of the same brood as the one bitten in the previous experiment, and of the same size, very active, vicious, and vigorous, was bitten at 12-15, 12th December, 1868, by a Daboia that had not bitten for many days, and whose poison glands and ducts were apparently full of poison.

The fangs of the Daboia were made to penetrate deeply in a part of the snake posterior to the viscera—that is, not far from the tail; and a quantity of the poison was shed on the snake, and probably into the wound.

The young Cobra, beyond the local effects of the bite, appeared unaffected; on being released, it deported itself just like the one bitten by the Cobra in experiment No. 1, and was active, ill-tempered, and aggressive as ever.

These experiments are, I think, conclusive, and prove that the [illegible] other species.

[illegible] the Cobra that bit them were full-grown, vigorous, and fresh [illegible] roughly injected, and that the fangs penetrated deeply. The [illegible]

The bitten Cobras were closely watched for 48 hours, at the end of which period, no symptom but the local effects of the bite was manifested. I think it may be fairly concluded, from these and other experiments, that the Cobra is not affected by the poison either of the Daboia or of its own species.

ON CHOLERA.

By C. MACNAMARA,

[illegible]

[illegible] 270.)

[illegible] in the next twenty-four hours."* It spread gradually from [illegible] the native troops in the Madras Presidency, amounting to some 74,000 men, there were 1,718 cases and 708 deaths from cholera in 1845, and 2,699 cases and 1,208 deaths in 1846.‡ From the [illegible] rife in his territories in 1845-46.§ In the Satara district, the [illegible] June, 1845, it was computed 1,000 fatal cases occurred in the [illegible] virulent, particularly at Taffrea; out of 4,111 cases, no less than 3,655 perished during the month of November, 1845.

Early in April, 1846, we find that cholera was reproduced over nearly the whole of Western India, Madras, and Bombay. On the 21st of April, Dr. D. Macleod reports its appearance [illegible] The troopers of the 5th Irregular Cavalry were simultaneously affected [illegible] to Baroda. Dr. C. R. Francis reports the circumstance of the outbreak of the disease at Nusseerabad; and similar information was received by the Medical Board from Nowgong and Mhow. Dr. Spilsbury further reports that cholera had broken out at Hoshungabad, and that "it raged fearfully for several days at [illegible]

[illegible]

western portion of this presidency, we find it had broken out in Bombay. "An awful visitation of the cholera is stated to have taken place at Sholapore and its vicinity, the disease first appearing in the camp of the 33rd Regiment N. I., when on their march to Jaulnah. Spreading thence to the south Maharatta country, it almost depopulated several villages in its [illegible] it proved so fatal to the native population. It subsequently [illegible]

It will be remembered I described the cholera of 1820 as affecting Western India, Madras, and Bombay, in very much [illegible] work to the effect that the disease had not only appeared in 1821 in Omaun, but that it existed on the Coast of Zanguibar. It is remarkable that we have almost an exact repetition of these details in the history of the cholera of 1846. Rigler‡ expressly states that "in the month of May, 1846, cholera showed itself at Aden, Mocha, and Jeddah, and invaded almost the whole of the sea-board of the Arabian peninsula; it even penetrated into the interior of Omaun. However, it spared the opposite coast of the Red Sea, and did not even touch Mecca, which is not far from Jeddah." The fact of the disease appearing at Aden in the early part of 1846 is confirmed by the Bombay medical reports; the only deaths from cholera among the European portion of the garrison, from 1840 to 1848, occurring in 1846.§

At the time of the outbreak of the disease at Jeddah, the annual fair was being held there, at which merchants assembled from India, the Islands of the Archipelago, and Coast of Africa; [illegible] on these occasions. Fortunately for the pilgrims, the celebration of the Courban-Bairan did not take place until November, otherwise there can be little doubt that cholera would have spread to Mecca; as, in fact, it did later in the year, when the devotees had crowded into the Holy Places for the celebration of this festival.

In consequence of our operations in Sind, Kurrachee had risen to be a place of some importance since the former visitation of Persia by cholera. In 1846 there were three European regiments stationed there, and on the 14th of June cholera broke out with terrible virulence among these men.‖ Dr. F. S. Arnott, who was at the time stationed at Kurrachee in medical charge of the 1st Bombay Fusiliers, had, as I have before remarked, noticed the fact of cholera having visited the station [illegible] camp, town, and vicinity continued to occur throughout the cold and hot season. It seems not improbable that the terrible disease of June, 1846, may have arrived in Kurrachee in the previous year. That it did not previously show itself in an [illegible] certain adventitious circumstances necessary to its full development. What was wanting may have been supplied about the beginning of June, when the weather begins to partake of the peculiarities of the south-west monsoon, being loaded with [illegible] southern coast of Sind."¶ Among the men of H.M.'s 86th

[illegible]

* [illegible]

‡ [illegible]

§ [illegible] of 1848-49, p. 3.

‖ [illegible]

¶ [illegible]

Regiment, there were 110 cases and 238 deaths from cholera between the 11th and 25th of June; in the three European Regiments at Kurrachee [illegible] less than 800 cases occurred within the space of a few days.

In 1846 the appearance of cholera at Mushed towards the close of 1845, and its burst forth there again with renewed violence in June of the following year, quickly extending to Teheran and Tabreeze, and overspreading the province of Ghilan; before the close of the year, it reached as far north as the town of Derbent, on the Caspian Sea.

In September, 1846, cholera had appeared at Bagdad; it advanced up the Tigris and Euphrates by Diarbekir, Orfa, Biredjik to Damascus and Aleppo, and did not, as has been affirmed by some, cross the desert directly from Bagdad to Damascus.* Nor does it appear to have travelled with the Persian pilgrims from Kerbela across the desert to Mecca; doubtless, as Vehr Bey asserts, cholera did break out at Mecca in November; but, as we have seen, it existed at Jeddah during the month of May, when in all probability the seeds of the disease were sown, to be brought into active operation again by the assemblage of the pilgrims during the later months of the year, some 15,000 of them then falling victims to this pestilence in and about the city of Mecca.

"The further progress of the scourge seems to have been stopped by the approach of winter (1846-47); but early in the following spring it broke out with fresh violence,"† and was reproduced over the entire area invaded by it during the previous year.

In April, 1847, the disease appeared again at Derbent and spread to Tenir-Khan-Snowry, from whence it was said to have been transmitted to Kizliar, in June, by a detachment of invalid soldiers. From Kizliar it spread along the steppes as far as the Volga, reaching Astrachan on the 30th of July. It had broken out at Tiflis on the first of the month, and spread from thence to the coast of the Black Sea, *viâ* Gori to Poti and Trebizond. Following the great military road from Tiflis, the cholera spread over the Caucasus mountains, reaching a height of some 6,000 feet, and appeared at Staveopol. During August it broke out among the shipping at Tagonrog, to the north of the Sea of Azov, at the same time appearing at Saratov (August 20th) and in the Government of Orenburg. In September it reached Simbirsk and Nijnh-Novgrod to the north, and to the west Moscow, where the disease was not severely felt during the year, confining its attacks chiefly to one particular district, near the river. Here, however, it assumed a severe character, for nearly one half of the cases that first occurred terminated fatally.‡

Cholera broke out at Constantinople on the 24th of October, 1847;§ but from this time the epidemic began to decline over the area it had invaded. During the winter of 1847-48, some few cases, however, [illegible] reported as far west as Akerman and in Kherson, and Olgopol in Podolia, not above 30 miles from the Austrian frontier, and others near Riga. Sporadic cases were noticed in France and Britain.

In the spring of 1848 we find cholera breaking out with renewed vigour, and by August it had advanced from the east as far as a line drawn through Arabia, Poland, and Sweden.

Having broken out at Mecca‖ and Medina in April, 1848, it appeared with the returning pilgrims in Egypt in the middle of July, destroying some 3,000 of them at the Tantah fair, and committing terrible ravages over the whole country. In Moldavia and Wallachia the mortality from cholera was very great. The whole of Russia, Poland, Finland, and Sweden were under its influence before August, although the Government of the latter country made most strenuous and costly efforts to bar its advent by means of quarantine. As a general rule, however, there were but faint exertions made on the part of the Governments of Europe to restrict the advance of cholera by the enforcement of quarantine laws, during the epidemic of 1848-49. It appears from a statistical paper submitted to the Russian Minister of the Interior by Dr. Rosenberger, that from 1847 to 1849 the deaths from cholera in Russia exceeded the number of one million, and the number of towns attacked was 471, the communications between infected and healthy places being open. On the other hand, in the first invasion from 1829-35, when the progress of cholera was interrupted by sanitary cordons, the number of deaths did not exceed 100,000, and there were only 336 towns attacked. From this fact the Cholera (Constantinople) Conference argue, the epidemic on both occasions being equally violent, that the restrictive, measures employed in the first epidemic were, without doubt, useful. The value of this deduction evidently rests on the statement that the two epidemics were equally violent, a fact which Dr. Gavin Milroy evidently doubts; and he gives us reliable data for concluding "that the diffusive energy of the epidemic of 1848-49 was considerably greater than that of its predecessor, invading a larger area of the world's surface (and with more deadly consequences) than in 1831-32.* If so, evidently the force of Dr. Rosenberger's arguments regarding the advantage of sanitary cordons is much weakened, if not destroyed.

The disease had broken out at Berlin as early as July, and in September at Hamburgh, and in Holland. The southern portion of the Austrian dominions appear to have suffered to some slight extent, and there was a partial outbreak of cholera near the port of Vigo in Spain. Italy was not affected at this time; Greece and Malta remained free from the disease, having been under strict quarantine from July. A few cases of cholera occurred in France, towards the end of the year.

On account of the insulated position of England and America, the circumstances of the advent of the disease into these countries could be more satisfactorily investigated than in most continental states. Dr. Parkes was selected to enquire into the history of the first cases that occurred in London. From his account we learn, that the first instance of the disease in the metropolis was that of a seaman named Harnold, who arrived on the 18th or 19th of September, in a steamer from Hamburgh; he died of cholera at Horsleydown (London), on the 22nd of the month; the next case was in the instance of a man who slept in the same room with Harnold. There can be no doubt as to the fact of cholera having existed on board the steamer in which Harnold sailed, for the second engineer died from cholera on the passage; and we know the disease had been prevalent at Hamburgh for some time before the vessel started. During the first week of October, 26 cases were reported in London, all but four being fatal; of these 18 occurred on the River Thames, or close to its banks, the remainder being scattered over other parts of the city.

In Edinburgh cholera first appeared on the 4th of October, 1848. "On the Wednesday before this, three pilots from Newhaven went to the Isle of May to look out for vessels; one of them went on board a ship from Cronstadt, bound to Leith. The other two remained in their boat on the leeside of the vessel, and were towed to Leith, a distance of four or five and twenty miles; both of the men were seized with diarrhœa on their passage. On arriving at Leith, they went on board the ship; one of them died on the following Sunday of cholera. During the next eight days several cases occurred among relations and immediate neighbours of the pilot who died, and these were

* Cholera Constantinople, Calcutta, 1866, p. 182.
† Report of the General Board of Health on Cholera, 1848-49, p. 5.
‡ Idem, p. 6.
§ Lancet, Vol. I., 1848, p. 101.
Cholera Constantinople, Calcutta, 1866, p. 704.

* Dr. Gavin Milroy on Cholera, Medico-Chirurgical Review, 1849, p. 146.

out at Staten Island and New Orleans. Consequently, between

must here briefly recapitulate its circumstances, in order to complete my account of the disease in 1848.

Sic sailed from Havre on the 9th of November, with 315 steerage passengers on board. There was no cholera at

of cholera occurred. Before her arrival at Staten Island (the quarantine station of New York), seven of the steerage passengers had died, and twelve sick were landed there.

or, in fact, in any other part of America. One of the men

with the cholera patients, took the disease and died. Several

with the sick, and among the emigrants there were 63 cases and 29 deaths. The disease did not spread, "although it is known that numbers escaped from the quarantine and went

was kept up between those who were within the enclosure and persons visiting them from without. In a filthy German boarding house, containing about 200 inmates huddled together in the most disorderly confusion, two cases of cholera occurred in individuals who had escaped from quarantine. The establishment was broken up, and the inmates scattered over the city, and yet the disease did not follow. A sharp frost intervened; wintry, and the disease entirely subsided.§

reaching New Orleans. On the day after the arrival of the vessel, one of the passengers was brought to the hospital in a

the city. The weather was very warm and damp; "the streets reeking with moisture, heavy fogs overhung the city till late in the morning." After the arrival of the "*Swanton*, the temperature, so far from moderating, increased; so that from the 16th to the 23rd of December the thermometer rose to 84,' and the air was so liberally charged with moisture, as to impart a feeling of a stifling sensation. Under this condition of things, the

It is particularly to be noticed that the passengers embarked on board these ships had arrived at Havre from countries in which cholera prevailed. When the disease appeared, the two its respective port. The first case occurred in the *New York* on the 25th of November, 1848, when out of port 16 days, and in north latitude 42.° western longitude 61°. On the following day, the 26th November, the first case occurred on the *Swanton*, when 27 days out of port, and in north latitude 25° 47,' west longitude 57° 08'1. These cases appeared immediately after a sudden change in the weather from an agreeable coolness to one of comparatively unpleasant warmth, accompanied by a particularly hot south wind, such as the captain of the *Swanton* had never felt before, and which he describes as more like artificially heated air than anything else. From this time until the arrival of these vessels at their respective ports they retained the disease on board, and each sent cases on shore. Immediately after their arrival cases occurred at Staten Island and New Orleans, in persons who had never been on board the vessels, and from this date cholera became epidemic in the United States.† In fact, Dr. Fenner reports that after the disease had once begun at New Orleans, almost every vessel and steamer leaving the port had 20 or 30 cases on board, and thus persons having cholera and dying with it were carried to all the landing towns and cities up the river as high as Cincinnati. For instance, the steamer *Convoy*, after a run of four days from New Orleans, and having had cholera on board, reached Memphis on the 20th of December. On the 22nd a boy was attacked with cholera; he had been on the wharf, selling fruit: at the time the *Convoy* arrived. The disease spread through the town and neighbourhood. It is remarkable that from the 20th October to the 29th December, with the exception of two fair days, it had rained incessantly; the ground was saturated with moisture, and the temperature was unusually high for the season of the year.

After a period of comparative rest, during the winter of 1848-49, cholera was reproduced in the spring over the greater part of Europe, America, and Canada.

extent; there were cases, however, at Vienna early in the year.‡ Gibraltar. Portugal remained free from cholera. After spreading over the south of France, the disease reached Marseilles in August; and soon afterwards Toulon, Nice, Genoa, Leghorn, and thence to Naples and Brindisi, notwithstanding every attempt to arrest its progress.§ Towards the end of the year, Tunis, Oran, and Algiers were more or less under the influence of the disease.

Cholera broke out in Paris in March, and till the end of

in October. The epidemic was very general throughout France, and the history of its spread into several departments has been carefully described; for instance, Hamel, a rural commune, was absolutely free from cholera until the 4th of April, 1849, when a soldier named Guilbert arrived from Paris, where cholera was raging. After remaining ill in his father's house from diarrhœa for four days, he was removed to the hospital at Amiens; on the same day the soldier's brother, Andre Guilbert, who had constantly visited the sick man, was seized with cholera and died. Three days afterwards Andre's wife took the disease and died. Guilbert's father was attacked on the 11th of April and died on the 15th; his brother and several other members of the family, together with a little girl who was in the habit of frequenting the house, were all seized with cholera within a few days.*

Cholera was diffused more or less completely over the whole of England during the summer of 1849; the greatest mortality that occurred in any one place was at Hall, where, out of a population of some 10,000 inhabitants, 287 died from this disease. Dr. W. Farr observes, "If a foreign army had landed on the coast of England, seized all the seaports, sent detachments over the surrounding districts, ravaged the population through the summer, after having destroyed more than a thousand lives a day, for several days in succession, and, in the year it held possession of the country, slain 53,293 men, women, and children, the task of registering the dead would be inexpressibly painful; and the pain is not greatly diminished by the circumstance that in the calamity to be described the minister of destruction was a pestilence that spread over the face of the island, and found in so many cities quick poisonous matters ready [illegible] inhabitants."†

The disease in England, as in other places, was apparently very capricious in its habits, leaving the inhabitants of many localities unaffected, and in the serene enjoyment of health; but Dr. Farr on this occasion brought out, with remarkable clearness, the relation which existed between the elevation of the soil and the mortality from cholera; thus at 100 feet above the Trinity high-water mark, the observed average mortality was 17, at 70 feet it was 27, at 30 feet 65, and at high water level 177, conclusively showing that human beings living on a low, and consequently, as a general rule, a humid soil, were those most subjected to the influence of cholera.‡ This rule, it must be remembered, holds good only so far as, that where the mortality was high the elevation of the soil was low; it by no means follows that all low lying places were affected with cholera, and that the high levels escaped. Lyons, for instance, has been always free from cholera, although a part of the city is built on a low alluvial soil, situated on the confines of two rivers, with a poor and dense population; nevertheless, it was unaffected by cholera in the epidemics of 1832 and 1835; the disease appeared in a single building only in 1849: a few cases occurred there in the epidemic of 1853, and none in 1865.

With regard to the [illegible] of the disease in England, 119 places, of which 69 were district towns or villages, 15 parishes or districts, and 34 public establishments, and the remaining 1 a private house standing isolated in the country, it was ascertained that, in no less than 73 instances, the disease appeared subsequently to the arrival of infected persons, or the introduction of other possible vehicles of infection.§ In some few towns, as at Shrewsbury and Oxford, and where the first cases occurred in public institutions, it was impossible to trace the importation of cholera to human intercourse. The disease did not appear simultaneously in all parts ultimately affected, but began in one spot, or in a small number of spots, and increased by attacking a larger number of localities. In large cities it is true it appeared in nearly all quarters or divisions within a few days, but still in each quarter it affected one spot first and others in succession.*

I have already described the outbreak of cholera in Staten's Island in December, 1848; the disease did not make its appearance in the city of New York until the following May, when it first attacked some of the poorest and most degraded human beings on the face of the earth. Dr. Buel, of New York, states, on his first visit to these people in Orange Street, he found five of them crowded into a cellar, some ten or 12 feet square, with nothing over them but a few rags, and nothing under them but the mud floor; they were all five in various stages of cholera. It appears that other cases had previously occurred in this cellar, for these poor creatures had been seized with cholera after celebrating a wake in commemoration of a departed friend, who had just died of the disease. From Orange Street cholera spread over New York, and from thence to the various large towns on the American sea-board of the Atlantic, and, in fact, over the greater part of the United States. In several instances the commencement of the epidemic was traceable to persons arriving from previously affected localities, but in New York and in other cities it was found impossible to trace the first instances of the disease to such a source.† Throughout Canada cholera prevailed extensively between the months of July and September, 1850. It does not appear to have extended from the east as in 1832, but rather from the United States. A few cases only occurred at Gross Isle, the quarantine station on the St. Lawrence, below Quebec; whereas in the first epidemic this station suffered very severely.‡

During the year 1850, cholera of a virulent type again broke out in Egypt, and along the whole of the African sea-board of the Mediterranean. It did not, however, in any instance, spread beyond three days' journey into the desert.§ Slight outbursts of the disease at the same time occurred over the greater part of Europe and America; in fact, cholera was reproduced over the area invaded by it during the previous years. Beyond this, localities hitherto free from its influence were now attacked, as for instance Malta and Gozo. Cephalonia, one of the Ionian group, was affected in July, "the population being reduced to famine by means of the rigorous quarantine, which excluded them from all intercourse with Greece, and with their brethren;" nevertheless, Greece was preserved from cholera throughout this epidemic, as she had been in the former visitations of the disease to Europe in 1832 and 1837.

During the year 1850 cholera spread over Mexico and California. In October, Cuba and Jamaica were under its influence; this was the first time the latter island had been visited by cholera; and it committed the most distressing havoc among the people. Mr. J. Watson, Surgeon to the Naval Hospital, Port Royal, and whose account of the disease in 1833 in Portugal I have referred to, reports that "for months past American steamers had been in the custom of touching at Port Royal and Kingston on their voyage between New York and Chagres. About a week before cholera appeared in Port Royal, two young men arrived from Chagres, their father having died, shortly before they left America, of cholera." This was the only instance of a suspicious person arriving in the town which Mr. Watson could discover; and as neither of these men, or the inmates of their house, were affected with the disease, he concludes, it was not communicated to the inhabitants of Jamaica from a previously affected place.‖

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* [illegible]

* Report on the Mortality of Cholera in England, 1848-49, by [illegible]

* [illegible]

† [illegible]

* [illegible]

* Dr. [illegible]

* Report on the [illegible]

‡ [illegible]

§ [illegible]

‖ [illegible]

almost entirely subsided in Europe and America by the end of

Island; it was one of those isolated cases upon which we naturally set much value in a history of this kind; and we are indebted to Mr. H. Haughton, the British Vice-Consul in the Canary Islands, for the following particulars regarding the epi-

as well as Madeira, were preserved intact. The cholera had

without any preliminary fumigation. It is said that the first house in San Jose (a suburb principally inhabited by poor people) in which the disease made its appearance, was that of a washerwoman, who had taken the mattrass and foul clothes of one of the poorer passengers to wash, and that her children slept upon them during the night. Death soon followed; one neighbour after another was slowly, but gradually, attacked; the seed had found its appropriate soil, and slowly, but too surely, germinated." Supposing the articles from this vessel to have been landed about the 14th of May, four or five days after her arrival in the port, it was just 15 days subsequently the first case of cholera occurred; the disease having commenced on the 30th of May. It spread rapidly from the quarter of San Jose. Mr. Haughton remarks,—"no pen can give an idea of our sufferings. It has been left to this insignificant place to complete the picture of horrors so ably described by Daniel Defoe." No less than 9,000 deaths occurred among the inhabitants of this small island, and most of them within the space of a few

at its height on the 10th of June. It began to decline on the

The island was, of course, cut off from "all communication with the other islands" by order of the Spanish authorities; and Mr. Haughton particularly notices the fact that neither Teneriffe nor any other of the neighbouring islands was affected by the disease; the cholera being absolutely and completely shut up in the Grand Canary Island, in consequence of the strenuous laws enforced to prevent people escaping from the pestilential spot.

It is hardly possible for us to pass over this period in the history of cholera without alluding to some of the more important theories advanced at the time to explain the phenomena of the disease; for these theories evidently exercised an important influence upon the line of investigation followed by enquiries

fore, briefly consider these hypotheses, without expressing an opinion at present as to their value; for, as we progress with our history, we shall find much light has, within the last 20 years, been thrown upon the circumstances of the disease, of

on the very difficult subject of the etiology of cholera.

It was from observations made during the epidemic of 1848-49,

cholera being swallowed, and acting directly on the mucous

in the intestinal canal, and passing out, much increased in

afterwards, in various ways, but chiefly by mixing with the drinking water in rivers and wells, reached the alimentary canals of other persons, and produced the like disease in

Dr. W. Budd, of Bristol, in a letter to the *Times*, dated September 5th, 1849, expresses a somewhat similar opinion as to the cause of cholera. He supposes the disease to depend on a living organism of a distant species of fungus, which being swallowed becomes infinitely multiplied in the intestinal canal, and the action thus excited causes the flux of cholera, which, with its consequences, constitute the disease. These organisms Dr. Budd believed to be disseminated through society by means of their contact with food, but principally by the drinking

the most important means for preventing the progress of cholera, to destroy the poison, which continues to be generated in the bodies of infected persons, by mixing the discharges with some

such as chloride of lime. And as water is the principal means of the dissemination of the disease when it exists, too much care cannot be exercised in procuring pure drinking water.

The idea of cholera depending upon the presence of a fungus growth affecting the epithelium of the intestinal canal, had originated with Boehm in 1838. This distinguished observer not only then described, but depicted, forms of cryptogamico growth amid the debris of the epithelium in choleraic dejecta. He remarks that the matters found in the intestines after death from cholera "teem with vegetations of micro-fungi, and that innumerable round, oval, or elongated corpuscles are to be found in all the vomits and dejections as well as in the intestinal canal; sometimes single, sometimes two, three, four, or more, joined end to end, as links of a chain"† Dr. Swayne published drawings of "cholera cells" in the *Lancet* for October 13th, 1849; but these were subsequently discovered by Mr. Busk to be the spores of a species of uredo, and other extraneous matters introduced into the intestinal canal with the food.‡

Dr. W. Farr, reporting on the epidemic of 1848-49 in 1852, states that Asiatic cholera is induced in man by a certain specific matter, the zymotic principal of cholera, which he proposes to call cholerine. "A variety of this matter was produced in India in certain unfavourable circumstances; it had the property of propagating and multiplying itself in air, or water, or food, and of destroying men by producing in successive attacks a series

"That cholerine is an organic matter cannot, I think, be doubted by those who have studied the whole phenomena and the general laws of zymotic disease. The great question remains, is cholera produced in the human organization alone, and propagated by excreted matter? Is it produced and propagated in dead animal or vegetable matter, or mixed infusions of excreta and other matters out of the body? Is it propagated through air, through contract, or through all these channels?"§

† [illegible]

‡ [illegible] 1848-49. By Dr. W. Farr, p. 89.

. The London College of Physicians, in their report on the epidemic of 1848-49, published in 1854, replied with authority to several of the questions put forward by Dr. Farr. The college gave it as their decided opinion that, on the whole, they consider Dr. Snow's theory untenable, observing "that it is not probable that in the case of cholera the influence of water will ever be shown to consist in its serving as a vehicle for the poison generated in the bodies of those who had suffered from the disease."*

The College were also of opinion, "the theory that the cause of the disease is a general state of the atmosphere," a general "atmospheric influence," or "epidemic constitution," has been found untenable;† they believe "that human intercourse has, at least, a share in the propagation of the disease; and that, under some circumstances, it is the most important, if not sole means of effecting its diffusion,‡ attaching itself to the surface of bodies, to the walls of rooms, and to furniture; it will also be collected by the cloths of persons living in infected dwellings, will be carried by them from place to place, and, wherever it meets with conditions favourable to its increase and action, will produce fresh outbreaks of the epidemic."§ The College, however, observe—"it by no means follows that cholera is always propagated in this way: it may spread independently of communication between the sick and the healthy; the agent then most likely to have conveyed the poison from one spot to another is the wind." Having discarded Drs. Snow and Budd's theory as to the origin of the disease, they formed the hypothesis that it was necessary for the spread of cholera that the poison should be received into a congenial nidus, in which it might multiply and exercise its terrible power upon human beings susceptible to, and brought within, its influence. By means of this theory the extraordinary exemption of certain localities from the disease was explained, the poison itself not having been carried by human beings, or the wind, into these exempted places, or if introduced, and no deleterious effect following, it was argued the poison could not have been delivered into a nidus fitted for its growth. It was evidently impossible to gainsay the truth of negative propositions of this description; but they very certainly did not furnish a satisfactory solution to Dr. Farr's questions, although elaborated with extraordinary skill, learning, and ingenuity. Men naturally began to enquire for some more tangible evidence of the existence of this subtle poison, and wished for more explicit information as to the nature of the nidus necessary for its growth and propagation.

We must, however, return from the land of speculation in which, it appears, most writers on cholera love to dwell, and study the somewhat dry details connected with the progress of the disease from one part of the earth to another. It is only by bringing into regular order the scattered records we possess on the subject, that we can hope to arrive at definite conclusions as to the etiology of the disease. I am confident, however, that, with a history of the kind before us, we shall, by means of a carefully considered process of inductive reasoning, be enabled to form positive conclusions as to the laws which govern the spread of cholera among mankind; and if so, it will not be too much to expect that we may be in a position to point out the means for its suppression, though not for its cure, when once it has attacked a human being.

(To be continued.)

* Drs. Baly and Gull's Report, p. 213.
† Idem, p. 214.
‡ Idem, p. 215.
§ Idem, p. 221.

SUMMARY OF FIFTY POST-MORTEM EXAMINATIONS OF INHABITANTS OF THE JESSORE DISTRICT, PERFORMED IN THE JAIL HOSPITAL.

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(Continued from Vol. III., page 272.)

9. The morbid changes in the *lungs* may be exhibited as follows:—

In no case could either lung be said to be healthy.

(a) Hypostatic congestion was the only morbid change in 5 right (*a*) and 9 left lungs (*b*). Total 14.

(b) Eight right lungs (*c*) and 13 left (*d*) were congested throughout. Total 21.

(c) Congestion and œdema co-existed in the case of 14 right (*e*) and 10 left lungs (*f*). Total 24.

(d) Engorgement, partial or total, was the condition noted in 14 right (*g*) and 14 left lungs (*h*). Total 28.

(e) Hepatization existed in 16 right (*k*) and 9 left lungs (*i*). Total 25.

In the case of the right lung, the whole organ was hepatized in 6 cases (*l*), the upper lobe in 5 (*k*), the middle lobe in 1 (*l*), and the lower lobe in 4 cases (*m*).

In the case of the left lung, the upper lobe was hepatized in 4 (*n*), and the lower in 5 cases (*o*).

(f) Emphysema existed in 3 right lungs (*p*) and 5 left lungs (*q*). Total 8.

(g) Tubercle existed in 4 right (*r*) and 3 left lungs (*s*). Total 7, and tuberculous cavities in the same number.

(h) One right lung (*t*) and 1 left lung (*u*) were collapsed and carnified.

(i) One right lung (*v*) and 1 left lung (*w*) were the subject of syphilitic degeneration.

(j) Excess of pigment was noted in 2 right and 2 left (*x*) lungs.

(k) The bronchiæ were inflamed in 1 case (*y*) and ulcerated in another on both sides (*z*).

(l) A cretaceous nodule existed in the right lung in 1 case (*aa*).

(*a*) Nos. 14, 23, 26, 35, 42.
(*b*) Nos. 2, 14, 23, 26, 29, 35, 42, 44, 45.
(*c*) Nos. 1, 5, 7, 8, 19, 20, 22, 31.
(*d*) Nos. 1, 5, 7, 8, 9, 19, 20, 21, 24, 25, 28, 30, 31.
(*e*) Nos. 4, 10, 15, 16, 17, 24, 30, 32, 33, 34, 38, 43, 48, 50.
(*f*) Nos. 4, 15, 16, 17, 32, 33, 34, 36, 43, 48.
(*g*) Nos. 3, 6, 12, 25, 27, 28, 29, 36, 37, 39, 40, 41, 45, 46.
(*h*) Nos. 3, 6, 10, 11, 12, 13, 22, 27, 37, 38, 39, 40, 41, 46.
(*i*) Nos. 6, 9, 10, 11, 12, 13, 14, 25, 28, 29, 37, 39, 40, 41, 44, 46.
(*j*) Nos. 3, 10, 11, 12, 22, 27, 38, 39, 41.
(*k*) Nos. 9, 11, 13, 14, 29, 44.
(*l*) Nos. 6, 25, 39, 40, 46.
(*m*) No. 41.
(*n*) Nos. 10, 28, 37, 12.
(*o*) Nos. 3, 12, 22, 39.
(*p*) Nos. 10, 11, 27, 38, 41.
(*q*) Nos. 19, 22, 45.
(*r*) Nos. 19, 40, 44, 45, 46.
(*s*) Nos. 2, 9, 18, 49.
(*t*) Nos. 9, 18, 49.
(*u*) No. 21.
(*v*) No. 50.
(*w*) No. 47.
(*x*) Nos. 2, 24.
(*y*) No. 19.
(*z*) No. 47.
(*aa*) No. 3.

both sides in 7, on the right only in 1, and on the left only in 6.

on both sides in 9 cases, on the right only in 5 cases,

(c) Hepatization existed in 20 cases (10 per cent.), on both sides in 5 cases, on the right only in 11 cases, and on

both sides in 2 cases, in the right lung only in 1, and

double in 3 cases, and confined to the right lung in 1 case.

A tubercular condition of the lung was observed in two cases, which were excluded from this series owing to a deficiency

stated.

From the foregoing it is evident that the lungs are liable

pally congestive and inflammatory. The processes have been arranged in series; and as their intensity proceeds from simple hypostatic congestion to hepatization, the ratio of cases

liable to the more severe forms of congestion and inflammatory disease than the left. The statement that the left lung was more frequently effected with engorgement than the right is fallacious, because in the cases of engorgement of the left

both.

The upper lobe of the right and lower of the left lung would

of cases in which pneumonia existed is startlingly great, but it is quite in consonance with my clinical experience. In most cases it is but the last stage of remittent, enlarged spleen, or chronic

other than physical. In such cases treatment is of little or no

but within 12 or 24 hours from the discovery of the consolidation death takes place, and invariably the heart is found studded with fibrinous clots, and the spleen in a state of chronic

I have had the habit forced on me, whenever a case of remittent or intermittent fever exhibits a high sustained temperature and continuous rapid pulse, with or without any respiratory symptom, of percussing the chest, and I thus frequently discover consolidations of the lung which, as far as indications other than physical are concerned, might remain unrevealed until they are disclosed in the dead-house.

The emphysematous conditions noted were associated with engorgement or consolidation of the lower and posterior portions of the lung, and were merely a condition of the upper and anterior portions of the lung shortly preceding death.

tant as compared with the more active processes. The syphi-

cular and fibroid change in a subject saturated with the poison.

(a) Hypostatic congestion.—The average weight of the right

(b) General congestion.—Right lung 7·2ch. (14·7oz.), left

(c) Partial hepatization.—Right 11·9ch. (24·4oz.), left 9·9ch. (20·3oz.)

(f) Complete hepatization.—Right 19·7ch. (40·4oz.), left no case.

(g) Right lung.—Upper lobe hepatized 10·7ch. (21·9oz.)

(h) Right lung.—Lower lobe hepatized 14·2ch. (29·1oz.)

(k) Tubercle.—Right 10·2ch. (20·9oz.), left 8·7 ch. (17·8oz.)

(l) Collapsed and carnified, right 4ch. (8·2oz.), left 12·5ch. (25·6oz.)

The correct weight of the healthy lungs is probably considerably under the average given above; 7ch. (14·36oz.) would probably be an approximation of the weight of the right, and 6¼ch. (13·33oz.) of the left.

for the right, and 1 to 128 for the left lung.

11. The condition of the *heart* was as follows:—

(a) A

right ventricle in 9 cases (*c*) (18 per cent.); this condition, which is a fibroid degeneration of the exocardium, has acquired a peculiar importance from the assertion, which was made last year by the Netley professors, that it was caused in soldiers by the undue pressure of the infantry pack, and the thickening was called the "soldiers' spot." In one case (No. 15) this statement would seem to derive remarkable and curious support. In this case two glands in the posterior mediastinum had become enlarged to the size of a pigeon's egg. The heart was somewhat hypertrophied, and the white patch on the surface of the right ventricle very well marked. Here a pressure on the organ *ab intra* seemed to produce the same effect on the heart as a pressure *ab extra* is supposed to do in the case of the soldier. On the other hand, the considerable percentage of cases in which the patch was found—and I presume that the Bengalee is less liable to fibroid degeneration than the European—would tend

drawn from finding this spot so often on the heart

very familiar with the patch in question.

(c) Nos. 1, 3, 4, 8, 15, 18, 19, 49, 50.

(b) The walls were noted fatty in 5 cases (*a*) (10 per cent.)
(c) Hypertrophied in 2 cases (*b*) (4 per cent.)
(d) The lining membrane of the heart was stained in 1 case (*c*).

In all other cases the walls were healthy.

As regards the valves—

(e) There was thickening of the mitral or aortic valves in 3 cases (*d*) (6 per cent.)

No other abnormality was noted.

The amount of morbid change disclosed in these 50 examinations is very trifling, and quite consorts with the clinical experience of the rarity of cardiac and vascular disease in the natives of lower Bengal.

(f) Atheroma of the aorta was noted in 8 cases (*e*) (16 per cent)—in all very incipient. Of these 8 cases, 4 had also the white patch on the right ventricle. The atheroma noted consisted of simple elevations, and neither ulcers nor cretaceous particles, or plates or bony formations, were noted.

As regards the contents of the heart—

(g) Fibrinous or decolorized clots were observed in 43 cases (86 per cent.), the cavities contained sanguineous clots only in 2 cases (4 per cent.), fluid blood in 4 cases (8 per cent.), and were empty in 1.

The distribution of fibrinous clots in the cavities of the heart will be seen from the following statement:—

They existed in all the cavities of the heart in 31 cases (*f*); in eight (*g*) of these they were noted as extending into the large arteries and their branches. In a typical case the largest clot is found in the right auricle, the next in size in the left auricle, next right ventricle, and the smallest in the left ventricle. In some cases they were associated with sanguineous clots which existed where the vessels joined or left the cavities; in other words, where the stream was most active. In such cases both clots were parts of the same mass. They existed in the right ventricle and auricle and left auricle in 2 cases (*h*); in the right auricle and ventricle only in 5 cases (*i*); in the right and left auricle in two cases (*j*); in the right auricle only in 1 case (*k*); in the left auricle only in 1 case (*l*); and in the right ventricle only in 1 case (*m*). The distribution of the clots in the cavities corresponds with their comparative size when all the cavities are occupied. To discuss the formation of these clots would be foreign to the scope and design of this record; but, as a fact of experience, I have found that their formation is invariably associated with asthenia, and that the more gradual the fatal exhaustion, the more firm and organized these clots are. The largest and hardest I have ever seen—more like a concretion than a coagulum—was in a case of general paralysis of the insane, in which the process of death was remarkably slow.

(*a*) Nos. 12, [illegible] 24, [illegible], 49.
(*b*) Nos. 15, 48.
(*c*) Nos. [illegible]
(*d*) Nos. [illegible]
(*e*) Nos. 1, 4, 6, 12, [illegible], 44, 49.
(*f*) Nos. 6, 10, 11, 12, 13, 17, 18, 19, 21, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, [illegible], 42, 43, 45, 46, 47, 49, 50.
(*g*) Nos. 6, 10, 13, 18, 27, 28, 31, 35.
(*h*) Nos. 1, 16.
(*i*) Nos. 9, 16, 20, 26, 44.
(*j*) Nos. 22, 38.
(*k*) No. 14.
(*l*) No. 39.
(*m*) No. 8.

As the heart was always weighed empty, and its condition varied from health in so few instances, the statement of its weight already given requires no modification.

12. The *peritoneum* was—
(a) Inflamed in 3 instances (*a*).
(b) Contained serum in 6 instances (*b*).
(c) Was adherent to liver or spleen in 3 instances. (*c*).
(d) Tuberculated in 1 case (*d*), and healthy in every other case.

The tuberculated condition was in a fatal case of lepra. The tubercles were both pale and pigmented. In this case, besides the contractions and ulcerations of connective tissues, there was atheroma of the aorta and fatty degeneration of heart, liver, and kidneys.

13. The *stomach* was—
(a) Congested in 1 case (*e*).
(b) Ulcerated in 1 case (*f*).
(c) Covered with a false membrane in 1 case (*g*) (*Indian Medical Gazette*, Vol. III., p. 130).
(d) Inflamed in 1 case (*h*). It was healthy in every other instance.

14. The *small intestine* was—
(a) Healthy in 24 cases (48 per cent.)
(b) Congested in 10 cases (*i*) (20 per cent.)
(c) Inflamed in 1 case (*j*).
(d) Mucous membrane thinned and wasted in 4 cases (*k*).
(e) Peyer's glands enlarged in 3 cases (*l*), one of cholera and two tubercular; and
(f) Wasted in one case (*m*).

15. The *mucous membrane* was—
(a) Pigmented in 6 cases (*n*).
(b) Sodden in 1 case of cholera (No. 31).

The amount of disease disclosed was thus neither serious nor severe.

16. The *large intestine* was—
(a) Healthy in 27 cases (54 per cent.)
(b) Congested in 11 cases (*o*) (22 per cent.)
(c) Ulcerated in 13 cases (*p*) (26 per cent.)
(d) Pigmented in 10 cases (*q*) (20 per cent.)
(e) Contracted and thickened in 8 cases (*r*) (16 per cent.)

The amount and kind of disease was greater than in the small intestine. In cases of dysentery I have observed that the morbid changes are, as a rule, more severe and pronounced towards the rectum.

17. The *liver* was noted—
(a) Healthy in 13 cases (*s*) (26 per cent.)
(b) Congested in 7 cases (*t*) (14 per cent.)

(*c*) Nos. [illegible], 39, 50.
(*b*) Nos. 3, 4, 9, 21, 24, 50.
(*c*) Nos. 2, 8, 13.
(*d*) No. [illegible].
(*e*) No. 3.
(*f*) No. 1.
(*g*) No. 48.
(*h*) No. 8.
(*i*) Nos. 12, 16, 18, 19, 20, 24, 26, 43, 44, 48.
(*j*) No. 8.
(*k*) Nos. 1, 2, 3, 24.
(*l*) Nos. 31, 47, 49.
(*m*) No. 19.
(*n*) Nos. 1, 3, 6, 9, 17, 26.
(*o*) Nos. 1, 3, 4, 11, 18, 19, 35, 38, 39, 44, 49.
(*p*) Nos. 3, 4, 6, 16, 24, 26, 35, 38, 39, 41, 43, 48, 49
(*q*) Nos. 1, 2, 3, 6, 11, 12, 13, 26, 35, 48.
(*r*) Nos. 3, 6, 12, 13, 26, 31, 43, 48.
(*s*) Nos. 5, 6, 7, 14, 20, 23, 25, 27, 30, 31, 43, 45, 46
(*t*) Nos. [illegible] 11, 20, 38, 39, 44, 48.

(c) [illegible]

(d) [illegible]

(e) [illegible]

(f) [illegible]

(g) [illegible]

(h) [illegible]

(i) [illegible]

(j) [illegible]

(k) [illegible]

(l) [illegible]

The weight of the liver, as influenced by its condition, is [illegible] as follows:

(a) The healthy livers average 1s. 6ch. (45·1oz.)

(b) The congested livers average 1s. 7·5ch. (48·2oz.)

(c) The fatty livers 1s. 4·9ch. (42·9oz.)

(d) The hypertrophied livers 1s. 10·5ch. (54·4oz.)

1s. 6ch. (45·1oz.) may [illegible] represent the weight of a healthy liver, and 1 to 37 the proportion to body weight.

18. The pathological states of the *spleen* are recorded as [illegible]

(a) [illegible]

These were, however, examined by the Sub-Assistant Surgeon, and "comparatively healthy" would probably be the correct [illegible] I myself saw a perfectly healthy spleen once I examined [illegible]

(b) [illegible]

(c) [illegible]

(d) [illegible]

(e) [illegible]

(f) [illegible]

(g) [illegible]

(h) [illegible]

(i) [illegible]

In [illegible] cases from [illegible] of this organ and the great variations in size, to determine the correct weight [illegible] The [illegible] variations of [illegible] and weight of

(a) [illegible]

(b) [illegible]

(c) [illegible]

(d) [illegible]

(e) [illegible]

(f) [illegible]

(g) [illegible]

(h) No. 47.

(i) [illegible]

(j) [illegible]

(k) [illegible]

(l) [illegible]

(m) [illegible]

(n) [illegible]

(o) [illegible]

(p) [illegible]

(q) [illegible]

(r) Nos. 2, 21.

[illegible] examination was made of the tissue, and its pathological condition was diagnosed from simple inspection of sections.

19. The [illegible]

(a) [illegible]

(b) [illegible]

(c) Degenerated in 25 cases (*c*) (50 per cent.)

[illegible] examination was made of the tissue, and its pathological condition was diagnosed from simple inspection of sections.

(d) The [illegible]

(e) Cystic degeneration existed in 7 cases (*e*).

(f) [illegible]

(g) Abscess in 1 case (No. 17).

(h) [illegible]

(i) [illegible]

The average weight of the healthy kidneys is 1·8ch. (3·7oz.) [illegible] to body weight of 1 to 462 and 1 to 437.

The foregoing summary will render clear the various pathological results to which the several organs are liable, and the extent to which they obtain. To discuss the grouping of these processes in individual cases, would be beyond the scope of this record, and would hardly be profitable with so small an induction. The appended table (No III) gives, however, in short, the principal morbid conditions of each organ in each case, and the numbers given in the foot-notes will serve as an index to the detail.

(*To be continued.*)

THE CARBOLIC ACID TREATMENT OF WOUNDS.

By G. D. McRitchie,

Civil Surgeon, Hansi.

HAVING for some time adopted this mode of treatment of wounds, I beg to lay the results of my experience before the profession, as shewing the great value of this antiseptic agent in the dressing of wounds and ulcers. The first important case in which I used carbolic acid was in an amputation below the knee, [illegible] of long standing disease, fatty degeneration of bone. Syme's double flap operation was performed. Immediately after the operation, Professor Lister's solution of 1 part carbolic acid to 4 parts boiled linseed oil was applied over the whole surface of the wound; after the flaps had been brought together, strips of lint dipped in the oil were laid on; and the stump was directed to be kept wet with a watery solution of the acid, of the strength of 1 to 40. On the third day the dressings were opened and re-adjusted. When again opened, on the sixth day after the operation, except in two small spots [illegible] were found to have taken place along the line of flaps; by pressure a little pus exuded from within the flaps; the "carbolic oil" dressings were replaced with a covering of sheet lead (obtained from the lining of tea chests), the whole supported with a bandage. The dressings subsequently were only with "carbolic oil," and the patient was discharged cured in 17 days. Suppuration, never of any consequence, gradually ceased, and by the ninth day had nearly disappeared. [illegible] was found to [illegible] where [illegible] were [illegible]

(b) Nos. 4, 5, 13, 20, 22, 23, 45, 48.

(c) [illegible]

(d) [illegible]

(e) [illegible]

(f) [illegible]

liable to take on a sloughy action; and, under ordinary treatment, I have no doubt that the patient would have remained in hospital for 8 or 10 weeks, instead of 17 days only. A patient, on whom I operated in 1864 for the same disease, was under treatment for upwards of two months.

Since the above case, carbolic acid has been used in all operations, and in all wounds and ulcers in in-door patients. Its trial in two cases of removal of the female breast for scirrhus has tended still further to show its antiseptic properties. In both instances the patients were several weeks under treatment, one is still so, though nearly well; but their progress, though slow, was steady; and suppuration, notwithstanding the large surface exposed, was very small indeed. Its efficacy, in a case of operation on a little girl aged nine years, suffering from caries of the elbow-joint, is worthy of remark. The disease was of two years' standing. In this case the joint was laid open from behind, and the diseased bone removed; strong carbolic acid was then freely applied to the exposed bones, and then the edges of the flaps of skin were brought together as usual. In this instance, though the patient was a delicate child, the deep soft parts healed by primary union, and from the beginning the amount of suppuration was small. The operation was performed on the 2nd September; she is still under treatment, but will be discharged in another week.

It may be mentioned that the application of the strong acid to an exposed raw surface acts very beneficially, and this procedure is now nearly always adopted after operation. The entire absence of all putrid animal odour with carbolic acid is no small advantage to patients and attendants, a fact which can fully be appreciated by all who have had any experience of a crowded surgical ward in an Indian hospital. In capital operations, I believe that pure, or at all events colourless, acid ought to be used. I have had some experience with an impure article, and have found that the latter does not act antiseptically as well as the pure acid; more suppuration takes place, and progress is not so satisfactory and rapid as with a better agent. Imported acid can now be obtained in Calcutta at a moderate cost, and where the charge for inland carriage is not excessive, its efficacy will, on the whole, be found superior to any other.

One suggestion I would beg to make. Is not carbolic acid worthy of trial internally in cholera? Probably it has already been used; if so, the results obtained by it, whether favorable or otherwise, are called for.

HURDUI, 10*th November* 1868.

PREVAILING DISEASES IN THE ANGAMI NAGA HILLS.

BY HEM CHUNDER BHUTTACHARJEE,

Sub-Assistant Surgeon.

THE valley of the Berhampootra is encircled with mountains or hills of various heights on all sides, except on the west, where it opens into the plains of Bengal. The southern extremity of this valley is bounded by a continuous range of hills, which have been artificially divided into the Garrow hills, the Cossyah and Jynteah hills, and the Naga hills; these designations signify that this continuous range is inhabited by distinct hills tribes, known as the Garrows, the Cossyahs, Jynteas, and the Nagas. The Naga tribe is divided into four sub-tribes; the Angami, the Lotha, the Kuchia, and the Rengma Nagas. The last, on account of mutual wars, have deserted their original habitations, and now inhabit a distinct set of hills, some two days' journey from their Angami brethren, occupying only a limited tract of country. The Angami Nagas inhabit a series of hill ranges on the summits of hills, varying in height from 3 to 6,000 feet above the level of the sea, being in many cases with very steep sides. Wood and hills and hills and hills

prepared rice beer, though they are not averse to English wines when they find them. They still hold little intercourse with the rest of the world, save when they come down for trading purposes in the plains.

The prevailing diseases amongst these men are—

1. Intermittent fever.
2. Remittent fever.
3. Diarrhœa.
4. Dysentery.
5. Scabies.
6. Intestinal worms.
7. A peculiar kind of ulcer, called in Assamese *dessmora*.
8. Affections of the eye.

1 *and* 2. Although it might be expected, (if we believe that malaria lives the surface of the ground, and does not ascend high hills or places of elevation,) that these people should be tolerably free from the attacks of malaria, yet it is not so, and one cause of their frequently getting the above diseases is that the sides of their hills are covered with dense jungle, and here malaria of the deadliest type originates from decomposing vegetation. To the influence of this deleterious agent they are constantly exposed, whether they go to their farms or descend to fetch water from springs below, because their footpath lies through these jungles, and they have no high roads or other means of descending or going to other villages. The types of these fevers are seldom virulent; and nothing like the dreadful epidemics which rage in the plains of Bengal has ever been heard of in the Naga hills. When attacked with any disease, whether it be fever or any one of those which follow in my list, they, having no medical treatment or native medicines of their own, take usually a fowl and sacrifice to their gods, in case the disease proves to be severe. It is an established maxim with these people, that starvation and abstinence from food during disease does more harm than good; consequently they take their usual diet, as much as their appetite permits them, during illness. No people follow so strictly the rule of "vis medicatrix natura" than these; and if any value is to be attached to the doctrine that mind has a good deal of influence on the state of the body as regards health and disease, nowhere is it more fully demonstrated than in the case of these people. For, when depending on nature does them no good during a disease, they always sacrifice pigs and fowls to their gods, with the faith that the evil spirit which has given birth to the disease will be driven out by the gods, and so they will be cured; and in several cases they are actually cured by this means. English medicines and doctors they value in case the doctor or his medicines never fail, whether the affection be simple or severe. This is not only the case with these people alone, but also with the Meekirs, Cookies, and Cacharis; all these, like the Nagas, having no medicines of their own, trust to their gods and nature in cases of disease.

3 *and* 4. It is no wonder that the greater part of the mortality which results in a Naga village is from these diseases. If we accept as true that impure water and air, and decomposed food, can give rise to diarrhœa and dysentery, then it is to be granted that providence is especially kind to these men; for I believe it is not as yet known to the public that there are few animals in nature which a Naga does not eat with relish; and it is said by them that decomposed fish and meat taste better than fresh ones. A Naga does not care whether the water he drinks is pure or impure, and the food he takes is fresh or decomposed; and, if we examine the interior of his dwelling, he surpasses the native of the plains in respect of uncleanliness; because in the same room he sleeps with pigs and fowls, and never [illegible] occupies space. If we analyse the usual constituents of his diet, we shall find that more than half of it is decomposed. Rice and vegetables, though simply dressed and taken like other rice-eating people, are deprived of their good qualities, when, at the [illegible] meals, but also through the rest of the day. The meat he takes

fire. Fish they seldom get, but when they do it is always decomposed, because, having no other instruments to catch them, they kill them with a species of vegetable poison, which becomes a powerful ferment in the dead fish. A few hours are sufficient to produce decomposition.

Habit, which is considered second nature, does modify the effect of these noxious agents a good deal; but when from any

5. The cause of this parasitic disease is that the water supply being scanty in these hills generally, and, when not so, brought from distances many thousands of feet below their homes, the trouble which it creates has, as it were, accustomed them to wash their bodies as seldom as possible; and if we say that they are washed only twice in their lives, namely, when born and when dead, it will not be far from the truth; consequently their bodies and clothes are dirty in the extreme, and as the itch insect prefers a nasty fellow to one who cleans his body often, it finds a convenient soil in the persons of these Nagas.

6. Intestinal worms occur here in the shape of round worms. generally. What the cause of its general prevalence is still in the dark, although it is said that impure water is the cause of it; still it is found in those who take the precaution to drink water filtered and boiled. In Assam, natives and newcomers alike suffer from it, so few can be said to be free from its attacks.

7. This is a peculiar kind of ulcer, with a central hard white core composed of semi-organized fibrous substance, and covered makes its exit, and when this is washed off, the central core comes in view. It occurs, as a rule, in the sole of the foot, in numbers varying from 1 to 20, and in a manner cripples the patient. It is not only peculiar with these hill people, but is also found in the people of the plains in Assam.

They are not very obstinate to treatment. Several cases I have successfully treated with caustic simply, first removing the scab, and, after removing the puriform matter, a good touch with nitrate of silver for a day or two forms another new scab, and the ulcer heals under it. One peculiarity with these ulcers is that they are prone to return.

8. Affections of the eye, namely, conjunctivitis of the simple and catarrhal kind, is common among these people; it is owing, I believe, to the frequent alterations of temperature prevalent in these hills, and also to the dirty habits of the Nagas never cleaning the secretions of the eye after a night's rest: these accumulate, and, from their irritation, the diseases in question are produced.

rheumatism, elephantiasis, and goitre are seldom met with; few

not unknown to these men, are also less frequent here than in the plains. The fear of small-pox among these men is so great, that they often come back from the middle of their journey on a trading excursion if they are informed that small-pox rages in

coming from an infected locality to enter their village, nor do they even speak with him. They have no system of preventing the disease by vaccination or inoculation, so their bitter experience of the dreadful mortality in bygone epidemics has taught them to shun this enemy from a distance.

extreme freedom from syphilis and the attendant evils that follow in its train. Secluded from the rest of the world by forests of many days' journey, they never hold sexual intercourse with the people of the plains, (who hate them as objects not to be touched) though they are very immoral regarding chastity amongst themselves. This boon which civilisation has destroyed in other places they still enjoy, and will continue to do so till they intermarry with their more civilised brethren of the plains.

CASES FROM PRACTICE.

CASE OF CRIMINAL ABORTION, BY A NATIVE MEDICINE.

BY [illegible]

[illegible]

[illegible] a female, aged about 25 years, the mother of two [illegible] only two are surviving, and a widow to the [illegible] was sent to [illegible] on the 18th [illegible] to be confined [illegible] of the induction of criminal abortion, at about the third month of [illegible] a native [illegible] to be generally resorted to in this district for the purposes in question.

The woman stated that the medicine administered to her was prepared according to the following [illegible]

Green [illegible]				
from seeds and cotton)...	...	...	8	ozs.
[illegible]	...	...	1	oz.
[illegible] (long kept)	...	...	1	,,
Water	...	...	2	pints

[illegible] down to half the quantity and strained, and the decoction thus prepared taken in equal doses three times a day. In taking the medicine, the first day she vomited thrice, and had four or five loose stools, but felt nothing like pain in the uterus. In the course of the succeeding four days, during which [illegible] uterine pains supervened, accompanied with hæmorrhage, and was soon followed by the expulsion of the embryo from the uterus.

On admission, on the sixth day of the abortion, she was which still continued, though in a diminished quantity. This [illegible] the tips of the two fingers.

[illegible] the patient seemed improved, but unfortunately, in the course [illegible] fever which, [illegible] 9th July, 1868.

The post-mortem examination, conducted sixteen hours after [illegible] abdominal organs were quite normal.

[illegible] currently trifling agents, are worthy of note; but it remains to be decided how their actions were brought to bear upon the tissues of the impregnated uterus. But as vomiting and [illegible] sympathy through the neighbouring organs.

[illegible] 50 years' [illegible] to be amongst [illegible] to test the truth.

HUMEERPORE, *9th Sept.*, 1868.

MELANOPATHIA.

By C. R. FRANCIS, M.B.

THE following account of a case of melanopathia has been kindly placed at my disposal by one of the medical officers attached to the Calcutta General Hospital, for record in these pages.

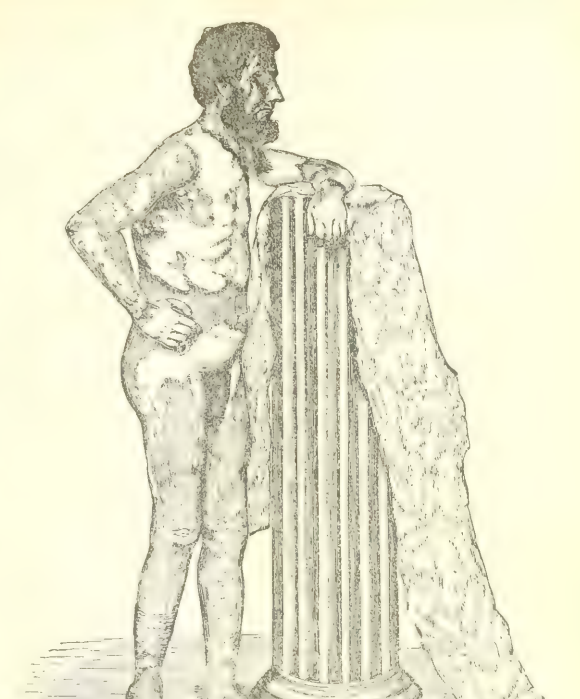
The condition is interesting to practitioners in India, as being the antithesis of what is sometimes met with here, and (though incorrectly spoken of as *white leprosy*.* In the one case—*leucopathia*—there is an entire *absence*, on certain portions of the skin, of pigment; in the other—*melanopathia*, or, as it is sometimes called, *melanosis*—the pigment is in excess.

In the case before us it is note worthy that the colored patches are inclined to be symmetrical, showing the constitutional nature of the disorder. The islets of pigment are represented by corresponding islets on the other.

John Wissbing, aged 13, a Russian Finn, [illegible] ship *Red Gauntlet*, was admitted into the General Hospital, Calcutta, on the 15th June, 1868, suffering from scurvy, contracted three weeks previous to admission, on the voyage from Liverpool.

Dr. J. C. Mackenzie, the Assistant-Surgeon in charge of the case, on examining the man, was surprised to find deposits of buff-colored pigment in irregular patches on his face, hands, trunk, and extremities; the deposits appeared to be in the rete mucosum, the epidermis being apparently quite unaffected.

The patient states that he observed the discoloration about eight years ago, when he first visited the tropics. Its commencement was gradual, first appearing in the region of the [illegible], and then spreading over the parts now involved. He has always been in perfect health, and is at present a stout, strong man.



* The Medical Service, Dr. Gavin Milroy (quoted by Dr. N. C. Macnamara) thinks, was an eruption, [illegible] or composed of smooth [illegible] appeared in their centre. This eruption was reddish white, or white; and is spoken of occasionally, as in the case of Gehazi, "as white as snow." It is not, however, known with [illegible] was indicated by the term [illegible].—ED., *I. M. G.*

To Correspondents.

FROM NOTICE.—"I am an assistant surgeon, under five years' service. I had charge of a 2nd class civil station as [illegible] No. 2, and [illegible] way. A was in England on sick certificate; B. (*locum tenens No.* 1) left for another appointment; and C. (myself, *locum tenens No.* 2) took over charge after the expiration of six months from the date of the departure of the incumbent (A.) for England. Query.—As A. had, at that date, *forfeited all his staff*, was I entitled to the whole of it in addition to my unemployed pay of rank? B. drew full pay of the appointment after he had been officiating six months. But C. was restricted by the Audit Department to Rs. 286-10 [illegible] as it was expressly because he (C.) had not officiated over six months. Officers of the Indian Medical Service are, by No. 370 G. G. O., dated 4th April, 1867, *on the same footing as military staff officers.* In such cases, what is that footing?

The week being done, does Government save the absentee's *second half staff*, which, at the end of six months, (under the rules in force on the date in question) used to revert to the appointment, by removing B. and substituting C.?"

** The principle upon which Government acts in paying "officiating" men is that no extra expense shall be incurred. At the end of the six months, during which period only half the salary of the appointment is paid to the permanent incumbent, and half to the *locum tenens*, the entire sum reverts to the appointment. If the Pay Department rules otherwise, the officer should appeal to Government.—ED., *I. M. G.*

A MADRAS medical officer, writing from Bangalore, enquires:—

"What rates of pay and allowances are passed in the Bengal Presidency to a surgeon major (Indian service), over 25 years' service, in charge of his own regiment, and of an extra one, no portion of staff salary for the latter being due to an assistant? Our correspondent adds that, in the Madras presidency, the answer would be Rs. 1,000+100, and thus the surgeon major gets Rs. 6-14 only for his extra charge. His impression, however, is that the spirit of the Government orders of 23rd December, 1864, and No. 370 of 1867, is to the effect that the full regimental pay, Rs. 1,093-2+100, for the extra charge, should be allowed to him as a member of the old Indian Medical Service; but the Controller of Military Accounts in this presidency thinks otherwise. An anomaly results from the Controller's reviews, inasmuch as a junior [illegible] of the old service gains a much larger proportion of the allowance for an extra charge than a senior surgeon major does,—and rather larger than a junior surgeon major."

[illegible] Bengal the rates are as follows:—

	Rs. As.
For a regiment (above 2) years' service	1,093 2
For the extra charge	100 0
Total ...	1,193 2

Our correspondent should refer the matter.—ED., *I. M. G.*

The Indian Medical Gazette.

BINDING OF BACK VOLS.

We [illegible] happy, on receiving the [illegible] Nos. of the past [illegible] BOUND VOLUMES, instead, at a [illegible]

Head Office, [illegible] Wyman & Co.,
January, 1869. Publishers.

NOTICE.

The Publishers of the *Indian Medical Gazette* are happy in being able to announce, with the new year, the permanent popularity of the journal, which is now regarded at home as the leading professional organ in India. It continues, too, to be highly [illegible] in the country. The Editor's object is to make the journal cosmopolitan, and to fill its pages with practical information which shall be interesting, not to Bengal alone, but to each of the three Presidencies in India.

The professional public need hardly be assured that, so long as the editorial functions are performed by Dr. Francis, this object will be consistently fulfilled.

The Publishers beg further to announce that they have received a promise of contributions throughout the present year from several eminent members of the profession. They hope, therefore, [illegible] upon increased patronage from all interested in medical science.

Head Office, [illegible] Wyman & Co.,
January, 1869. Publishers.

[illegible] would not prefer the reputation of Harvey or the Hunters to that of nine-

JOSEPH FAYRER DECORATED.

At these events were passing through the press we became aware of the fact that Joseph Fayrer, whose name has long been a household word throughout the country, is to be [illegible] with the Star of India. We shall have something to say on this subject in our next number; meanwhile we cannot close the current issue of the *Indian Medical Gazette* without offering our cordial congratulations to Dr. Fayrer on the [illegible] of the Order. Indian Medical Profession [illegible] Dr. Fayrer has been selected by the Queen of his [illegible] profession is a [illegible] and of the independently to [illegible] a [illegible] duty to a servant of England's [illegible]

SUB-ASSISTANT SURGEONS.

We [illegible] that Sub-Assistant Surgeons [illegible] that certain privileges are [illegible] Appointments by the Government [illegible] A Friend" to the [illegible] *Indian Medical Gazette*, [illegible] Sub-Assistant Surgeons may now be admitted into the [illegible] service on [illegible] They can draw the pay of their [illegible] beginning from the second year of Rs. 350 a month, and [illegible] with the [illegible] attached to their department (as Rs. 700 a month). "A Friend" states that, although [illegible] to a [illegible] appointments [illegible] of pay [illegible] of Assistant Surgeons [illegible] to the medical charge of a civil station in the uncovenanted service, similar service is not allowed to count for Sub-Assistant Surgeons; and this journal is quoted as the authority for the statement.

Our "Friend" has misunderstood what we wrote. The Appointments [illegible] the [illegible] increments of pay must have been something more than subordinate [illegible]; and, doubtless, if a Sub-Assistant Surgeon could show similar service, *he* would be admitted to the same privilege. "A Friend" has taken no notice of a great concession recently made to Sub-Assistant Surgeons in the fact of their previous service *as* Sub-Assistant Surgeons being allowed to count towards the *pension of the uncovenanted service*. This is a decided boon. It must be remembered that all that a Sub-Assistant Surgeon could look forward to, so long as he remained in that grade, was one-third of his salary at the end of fifteen years, or one-half at the end of twenty-five years, the maximum being Rs. 100 a month. Now, as an uncovenanted medical officer he may become entitled to one of Rs. 150 a month at the end of fifteen years, and he may realize Rs. 350 at the end of twenty-five, his previous service as Sub-Assistant Surgeon qualifying for this advantage.

It has, indeed, been decided by the Government that, although the Sub-Assistant Surgeon's previous period of service may count for pension, it cannot for increments of pay. This may be considered a hardship. It may be urged that if the service is considered of sufficient value to qualify for pension, why not also for pay? It is well known, in high places, that the Sub-Assistant Surgeon receives a first-rate education, and that his usefulness [illegible] We quite agree with what "Bull's Eye" says on this point in his letter, which will appear in our next issue. There is no doubt that the post of a Sub-Assistant Surgeon in medical charge of a civil station involves the performance of duties quite equal to, if not greater than those of a medical officer in charge of a [illegible] Ere long many [illegible] distinguished service in this capacity will be considered as qualifying for [illegible] as well as for [illegible] meanwhile, we would say to those who murmur and are impatient, in the [illegible] of a well-known poet:—

[illegible]

SANITARY COMMISSIONERS.

In the [illegible] to the *Gazette of India*, dated the 17th October, 1868, it is stated that, "in determining the nature of the duties to be [illegible] by the new Sanitary Commissioners, it must be remembered that these appointments were created [illegible] for the purpose of improving the sanitary condition of

the people." It was further observed that, "considering the magnitude and difficulty of the task to be undertaken, the supervision of the public health will, the Governor-General in Council thinks, take up all the time and tax all the energy and ability of the Sanitary Commissioners;" that, therefore, "these officers should not be called on to undertake any work which is not intimately associated with the special objects for which they were appointed; that they should not have transferred to them any duty now performed by others, unless that duty is unmistakeably one which more properly belongs to them; and that their work should be so arranged as to prevent, as far as practicable, all possibility of collision between them and other officers."

We cordially concur in the wisdom which dictated these remarks, and earnestly trust that the Sanitary Commissioners will bear them in mind in the execution of their essentially important duties. The task which is thus presented to them is truly gigantic. It is none other than the improvement of the sanatary condition of the people of India—roughly estimated at from 150,000,000 to 200,000,000. It comprises the general introduction amongst the people of the art of conserving and preserving health, or of securing "the most perfect action of body and mind, during as long a period as is consistent with the laws of life—of rendering growth more perfect, decay less rapid, life more vigorous, death more remote." (Parkes). It imperatively demands the waging of an incessant but judiciously conducted warfare against all habits, customs, and usages which equally oppose civilization and the healthy operation of physiological laws, and the substitution of cleanliness for filth, good for bad air, well arranged and nutritious for defective and comparatively innutritious dietaries, good houses for bad ones, a pure for an impure water supply, &c.; in short, of physiological and sanitary for pathological and insanitary conditions. It would, therefore, be difficult to estimate, even approximately, the importance of the duties attaching to the post of Sanitary Commissioner, the successful carrying out of which will contribute materially to the augmentation of the national wealth by effecting an improvement in the national health.

We note from the resolution of the Governor-General in Council an attempt on the part of some of the minor Governments to saddle the Sanitary Commissioners with other duties than those for which they were appointed. Thus the Punjab Government wished to combine in one officer the offices of Sanitary Commissioner and of the Inspector-General of Dispensaries; whilst that of the North-Western Provinces requested authority to give the Sanitary Commissioner the control of the civil medical establishments, and to convert him into an Under-Secretary to Government. A similar doubling-up system was proposed for Oude.

We are glad to observe that these propositions have been negatived by the Government of India. "As no other appointment which the Sanitary Commissioner could hold would so completely occupy his time and divert his attention from his own proper work as the medical supervision of a whole province, the Governor-General in Council does not consider that it will be advisable to add this to the Sanitary Commissioner's duties." If the Sanitary Commissioners are to be health officers with plenary powers in their own special department, acting directly under their respective Governments, they must be restricted to the devising of measures for the hygienic and sanitary amelioration of the general population in their jurisdiction, or for the gradual development of the great principles of *preventive or state medicine*. In order to increase their efficiency, they should be supplied with all necessary information by the municipal corporations, and by other authorities capable of affording such information within their provinces. We have no doubt that *all* will only be too glad to supply this information. But the first thing to be done, under existing circumstances, is that the Sanitary Commissioners should make themselves personally acquainted with the sanitary wants of villages, towns, and cities.

To attain the desired knowledge of what is wanted to better the health of the people, the Sanitary Commissioners will have to be continually on the move. To hamper these officers with other duties entirely foreign to the objects contemplated in their appointment to the important and useful offices they hold, would simply result in the production of inefficiency and the postponement of the adoption of the necessary measures for "improving the sanitary condition of the people."

We undertake to declare that in no country in the world are cantonments, garrisons, jails, hospitals, and dispensaries better cared for, in a sanitary point of view, than in India. Where defects exist, these have been systematically brought to notice by executive and administrative medical officers. And though much improvement may in many of these institutions be still necessary, yet it may be fearlessly stated that the present officers responsible for their sanitary condition are acutely sensible of them, and perfectly competent to deal with them according to the light of the times. Wherever imperfection is found, its perpetuation is universally dependent upon want of funds, and in no way attributable to destitution in sanitary knowledge on the part of the ordinary executive and administrative staff. No one would for a moment suppose that, were the ways and means provided with sufficient liberality to Norman Chevers, he would fail in making the sanitary condition of the great imperial institution under his charge all that could be desired. Who would dare to assert that if Frederick Mouat were put in possession of the needful amount of money, he would be many years before he secured a *maximum* of sanitation, and thereby a *minimum* of mortality in the prisons under his control? What is applicable to these two eminent sanitarians may be assumed as being equally applicable to the position and capacity of the local executive officers studded throughout the length and breadth of the land. Where then, it may be asked, is the necessity or expediency of making the sanitary superintendence of any of the institutions already well-cared for a part of the duty of the Sanitary Commissioners? The inutility of such a measure has been clearly recognized by the Governor-General in the third paragraph of the resolution under review.

There is, however, one feature in this resolution which, we fear, cannot but give pain to the medical department generally. To suppose that this department is unequal to the task devolving upon Sanitary Commissioners is, in truth, to deny to it the high historic renown which it has acquired for itself as an [illegible] of the Indian Army. Let the Deputy Inspector-General, and the Inspector-General of the Medical Department [illegible] carefully chosen, not by seniority, but [illegible]

India. Our plea for the preservation and elevation of the

for the control and management of civil, jail, and military

DELENDA EST CARTHAGO

forth be the object in life of all medical aspirants in the service for official advancement and status. As a matter of fact, the Sanitary Commissioner, with the Government of India, is now the *medical* referee on all questions of an imperial nature. Practically, he is superior to the Inspector-General of Hospitals. It would seem as if the good old medical service, as an

the temple of Cloacina, in which the sons of Æsculapius must worship, was to be erected on its ruins.

progress of the establishment which has so long assisted in sustaining the reputation of English rule, and in removing the antipathies of race.

The fathers of the medical service in India, however, were certainly not shining lights. "For it appears that, in 1770, the Court of Directors were not very particular as to the class

and military surgeons doing duty at the presidency; and in

admission into the service.

candidates; for in 1784 we find an order which directs that supernumeraries were to depend upon their private practice until vacancies occurred in the service, as, in permitting surgeons of any description to proceed to India for the purpose of prac-

Directors that the surgeons should, immediately on their arrival, receive pay.

some station in consequence of vacancies. This state of things could not last long, but the effects which followed were sufficient to demonstrate the impolicy of the measure, which proved to be as injurious to the service as it was inimical to humanity. In 1795, the Court of Directors therefore commenced to put their medical department upon a more respectable footing.

their service, they required that diplomas from one of the leading colleges of London, Edinburgh, Glasgow, or Dublin should be produced. Simultaneously with such requisitions, the local

ing of hospitals, and the supply of Europe and bazar medicines. In consequence of this arrangement, some of the surgeons, from a state of absolute distress, soon found themselves in the receipt of enormous salaries; for such was the paucity of surgeons at this time, that several offices fell to the lot of one individual, and for each of them he received a full allowance. It, however, so happened that, at large stations, the senior surgeons alone was to assume charge of regiments, or detachments without surgeons, and receive the whole of the emoluments.

in consequence of these contracts for supplying corps with medicine, diet, and dhoolees, that Drs. Monroe and Cockrane

country.

"The intelligence of the realization of such brilliant fortunes in India was not slow in reaching all parts of Britain. Gentlemen of the first families sent their sons to study medicine; the Indian service, therefore, was soon filled with as accomplished

Indeed, such was their literary acquirements, that many were

and houses of agency were principally conducted by them. We trace further proofs of their medical abilities by referring to several medical works written some thirty or forty years ago

great improvement by encouraging men of respectability and

scarcely afforded a fair remuneration for length of service and full surgeon, and as he possessed the allowance of a regiment

respectability have continued to come out and fill the vacated ranks. From this period it would have been prudent and sound policy to have pursued a system which had been found by experience in the king's service to be expedient, namely, that of progressively improving the situation of the medical servants of the state."*

(To be continued.)

INDIGENOUS DRUGS.

We understand that a great impetus is about to be given to the development of the native medicines of India. It is not, perhaps generally known that a large proportion of those already in use in our European and native hospitals in Bengal are the products of this country. They are procured from the bazaars, and afterwards prepared for use in the laboratories of the depôt in Calcutta, the provincial depôts being supplied from this source. It has been shown that these indigenous substitutes for their European congeners are quite equal in efficacy to, whilst they are much cheaper than, those costly importations.

It is expected that more attention, therefore, will be given to this subject by the provincial storekeepers. The drugs which exist in Calcutta and its neighbourhood are to be found generally all over India, and there is no reason why they should not be collected and prepared, locally, as they are at the presidency town. We have not space to enter fully into the matter now, but we would urge that *medical storekeepers* should be *selected men*,—that they should evince a special fitness for the development of the native materia medica. All cannot be Warings; but, with the assistance of his Pharmacopœia, recently published, those who are appointed to these important posts may follow in his steps and become of great use to the country. The men who are selected for the charge of medical depôts should have *something*, at least, of the spirit of a Waring, the great pioneer (with Royle and Forbes Watson) of India's progress in the development of the products of her soil.

SUBORDINATE MEDICAL EDUCATION IN INDIA.

It is universally acknowledged that the greatest boon to the natives of India, which has accompanied the English rule in their country, is the medical education of her sons, and the diffusion of European medical skill amongst her people. *Undoubtedly*, much has been done in this direction; but have we done all we could? We make bold to assert that we have not; and that, not from any want of energy in the cause, (on the contrary, we point to our metropolitan hospitals and dispensaries and say to sceptics, "si monumentum quæris circumspice,") but from ignorance of the most effective method of attaining our object.

We do not propose in this present article to deal with the question of [illegible]. That we reserve to a future opportunity. Our object to-day is rather to analyse the system, now in existence, by which we hope to bring the incalculable blessings of Western medical science to the homesteads of our [illegible] by the one or more skilled village [illegible].

* [illegible] from the *Indian Journal of the Medical Service*, [illegible] Calcutta, May, 1868.

Let us first ask ourselves what course we have already pursued, and what have been the results, and then we shall be in a position to discuss any more desirable method that may suggest itself, if there be found, as we venture to think there will be, room for improvement. Thirty-four years ago, a *peculiar* Governor-General crowned his remarkable administration by the foundation of the Medical College of Bengal. His object was to create a class of highly-educated native medical men, who were to become the medium of communication of English surgery and medicine to the *masses*. And, so far as the educational part of the scheme is concerned, the object has been attained to a degree beyond the most sanguine expectation. The ablest medical officers in the service have, from time to time, been appointed to the various professional chairs, and to the hospital. The standard of the education to be received has been so much raised by the University of Calcutta, that the students are found competent, after leaving college and proceeding to England, to maintain their position against the best educated students of Europe. They go home in medical charge of coolies to the West India Islands, Demerara, &c., from whence they are shipped free by the Emigration Agents to Liverpool or London. They then pass a short time in either Edinburgh or London, and return to their native country fortified with European diplomas and degrees, and ready either to engage in private practice, or to assume medical charge of a civil station in the uncovenanted department. Some compete for an appointment on the Indian medical establishment, and come out as assistant surgeons. Others, less ambitious, are content to remain in their own country; but it is remarkable that a large number first make an effort to succeed in private practice, failing which they declare for Government service. Some few, at stations where they are appointed to dispensaries, contrive to make themselves popular, where they become naturalized, as it were, in the locality, and are a real blessing to the people. A sub-assistant surgeon's surgical reputation will sometimes bring villagers more than a hundred miles for the purpose of consulting him. But such men are "rare aves in terris;" the majority cluster together in Bengal, and about the large towns, as much as they can, very many engaging in private practice on their own account, quite independent of the Government, for the sake of personal profit on a large scale. Some sub-assistant surgeons in Government employ, we grieve to say, do as little as they possibly can, and shirk their legitimate duties to the verge of safety. References are made now and then, to the head of the medical department, about a certain sub-assistant surgeon declining to see a poor suffering individual because he has not been summoned quite *en règle*, or because he is [illegible] with what he considers his due share of civility. Such men thus stickle at trifles, whilst a fellow creature is in [illegible] pain. Not only is such conduct inhuman, but, in the present day especially, when the cause of sub-assistant surgeons is being advocated by their influential friends, it is especially damaging discredit upon a body of really intelligent, well-educated, and, in many instances, gentlemanly and highminded public servants.

The sub-assistant surgeon can never be the village doctor. As a medium for educating the latter, he is invaluable; but there his utility, as regards the masses, ceases. Except in the [illegible] we have mentioned, the sub-assistant surgeon

when this class will occupy itself with yet higher objects of

Medical Council in England. We are looking somewhat into futurity; but we cannot help urging sub-assistant surgeons and native general practitioners to be up and doing something for themselves. The Government is very well disposed that the college *alumni* should scatter themselves over the face of the land, and settle down as independent practitioners: and these gentlemen should remember that India looks to them as her future medical councillors.

Before concluding this part of the subject we would raise our voice against any attempt to make teaching a *secondary* medical officers on the medical establishment; and hence it perhaps absolutely necessary in a mofussil town, in the present debilitated state of the medical service; although we would earnestly advocate the principle of single professorships, wherever possible. Where, however, this is impossible, we would urge that the professorship should be made the primary occupation; that is, that the station medical officers should be skill in certain specialities which they would be able to teach. For example: the civil and staff surgeon should be competent to take the chairs of surgery, medicine, and midwifery between them—including, perhaps, hygiene; ophthalmic and dental surgery would naturally, at the outset, be included, though hereafter we should advocate separate professorships even for these would be if Allahabad were selected as the station) might give lectures on materia medica and its kindred study—botany. acquaintance with the above subjects, as—now that an impetus is being given to the greater development of indigenous drugs—he would be expected to analyse the products of the country, and he should also instruct the students in practical pharmacy. Considering that the less a medical storekeeper is away from his depôt the better, it is desirable that he should teach on his own premises.

So far, we have shown how a certain extent of "doubling up" may be admissible; but here we stop. The Principal of the

a visiting surgeon would be necessary, with a view to

He, of course, should not practise. If possible, he should be imported from Europe. A good analytical chemist, co-operating with the medical storekeeper, might be of material use in developing the resources of India. He might lecture on medical jurisprudence, and he should be the chemical examiner to Government.

physiology, comparative anatomy and zoology, and pathology. To the a European house physician. Both these gentlemen would be resident, and, in the infancy of the institution, they and the Principal might divide these subjects amongst them. To the hospital would naturally be attached a museum, the curatorresident medical officers.

We next come to the important question of the hospital. To be thoroughly useful, it should contain beds for European, as well as native, patients. The European element is, comparatively, absent at Agra, whilst it abounds at Allahabad: this, in itself, is a strong argument in favor of establishing the new college at Allahabad, which is, moreover, the capital of the North-West Provinces. Further, it is centrally situated, and historic associations with which Allahabad is not, the name of Thomason having given to the hospital at the former station a significance which a building of the same description at the latter would not possess. But to establish a college and hospital act unworthy of the utilitarian disciple of the beloved Gamaliel, who would himself—were he alive—utterly condemn the proby no means. The more schools and dispensaries scattered throughout the length and breadth of the country the better: the building at Agra may still be maintained as a *dispensary*; but let a *collegiate* institution, with its large hospital for all classes, native teachers, its laboratories and museum, be located at the this article only of the higher kind of education to be given at this college,—of the education of sub-assistant surgeons. In our next we propose to discuss the education of hospital assistants, heretofore yclept native doctors,—of the class which is intended to represent the country practitioner in England. The cost of the whole will be then considered also.

(*To be continued.*)

Domestic Occurrence.

DEATH.

MACLEAN.—At Dera Ismail Khan, on November 27th, at 5 p.m., of consumption, CATHERINE ANN, the wife of Assistant-Surgeon F. FYSHER MACLEAN, aged 34 years.

Reviews.

Report on the Statistics of Small Pox Vaccination and Inoculation in Calcutta for the Quinquennial Period from 1st January 1864 to 31st December 1868, and Annual Report on Small Pox Vaccination for the Year 1868. By T. EDMONSTONE CHARLES, M.D., M.R.C.P., Lond. 1868.

IN the first of these valuable reports Dr. Charles clearly shows the value of vaccination as a preventive of small-pox. Small-pox bursts forth, and spreads over a district or country—say a village—in an epidemic form, but the establishment is moved up, and it promptly stamps it out; *i.e.*, it vaccinates everybody, and surrounds the infected tract by a cordon of protected individuals, beyond which the disease cannot penetrate. It dies.—it is stamped out. The vaccine establishment in Calcutta works upon this principle. But vaccination at the Presidency will always be imperfect in its results, and it is not compulsory. The victim of small-pox is responsible, and he has no right to allow himself to become so. He may be forbidden to inoculate himself for small-pox, but if he be not compelled to protect himself by the vaccine process—: where they have there can be no doubt,—the measure is only a half one. The portals for the entry of small-pox into a large eastern city are numerous and wide, and its inhabitants ought not to be allowed to offer themselves as targets to be shot at by it.

Why do we hesitate? Compulsory vaccination has stamped small-pox out in Denmark: why should it not be made to effect the same desirable object in Calcutta? Until such a law be passed, this hideous disease will strike down its victims, in spite of improved sanitation and vaccine establishments,—by hundreds and tens of hundreds. In 1865, in the months of February and March, nearly 3,000 persons died of small-pox in Calcutta. If, as Dr. Charles says, the killed and wounded at the battles of St. Vincent, Camperdown, the Nile, Trafalgar, Algiers, and Navarino were added together, the sum total would approach the number struck down here by small-pox in those two months. During the last four years of the Peninsular War, nearly 9,000 British soldiers were either killed in action, or died afterwards from their wounds. Add to the deaths from small-pox in 1865 those which took place in 1850, and we have a total of more than 9,000!

Men go into battle *expecting* to be wounded or killed. When Lord Cardigan charged with the light brigade at Balaklava—the play of the "white stocking" on his chestnut's near foreleg, as horse and rider advanced along that fatal valley, indicating to close observers that the post of danger was maintained throughout,—he never, for an instant, imagined that aught but death would be his fate at the termination of the ride; but it was to be the death of a soldier, *required* (wisely or otherwise is not now the question) by his country,—very different to deaths which are *not* required, and which are preventible.

Dr. Charles says that he fully sees the necessity for a law rendering vaccination compulsory, but that he is not prepared to press for it, till all *other** means of having the people protected have been fairly pushed. What other means? We sincerely trust that the Government of India will never give its sanction to any scheme of inoculation for small-pox; and yet, a recent Gazette intimates as much. Mr. Strachey thinks favorably of Dr. Charles's scheme in this direction. Those who favor it, we venture to say—whose mischief will result in consequence. We write in no captious spirit; but we must, as a public journalist and experienced vaccinator, most emphatically raise our voice against a system which would encourage inoculation for small-pox under Government regulation, however restrictive. The intention is undoubtedly good. Millions wait to be protected. Vaccination, unless propagated on an enormous scale, and at an incalculable cost, cannot do this. "Hence," say Dr. Charles and his followers, "let us adopt some measure which shall protect the people *at once, in those places where good vaccination cannot be depended upon.* We can't yet give you a really good substitute for your own excellent prophylactic, therefore, for the present, we will let you fall back upon that!"

Once let the natives of India see that their own system is thus thought of by their rulers, and an impetus will be given to their inoculating operations, which hereafter it will be found most difficult to control. It has been proved that a perfect virus may be made available, either from England or the hills. Dr. Pearson's successful cases are 90 per cent.; and the protection of all India therefore is simply a question of time. Let vaccinators, who should be sons of native physicians or of inoculators, if not inoculators themselves, be retained *all the year round*, and [illegible] the people, with whom they [illegible] to the prejudices and superstitions we must always, and, *in time*, become one of the institutions of the country. If encouragement, on the other hand, be given to inoculation, for small-pox, the advances which have been made in securing a footing for its antagonist since the days of Shoolbred will not only be checked, but we verily believe that its progress will be thrown back, as a prophylactic measure, *in the eyes of the people*, at least a century.

* The italics are ours.—ED., *I. M. G.*

A Manual of the Diseases of the Eye. By C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital; Professor of Ophthalmic Medicine and Surgery in the Calcutta Medical College. With Coloured Plates, fcap. 8vo, cloth, 12s. 6d.

Cælum non animum mutat, qui trans mare currunt.

HOWEVER readily the above proverb may have been allowed to apply, by our untravelled friends at home, to the European *character*, they have been chary of extending it to the European *intellect*. It is too generally thought that the mental faculties of Europeans in India will not bear comparison with those of their brethren in Europe. The mental profession has not escaped the unmerited stigma. It will be remembered that a writer in the *Pall Mall Gazette* stated a little more than two years ago that "the Indian doctors are not good physicians, and have contributed wonderfully little to the materia medica; but they are good surgeons, and they really understand tropical hygiene."

We took occasion to notice this effusion in our issue of June, 1866, and to point out the fallacy of the writer.

We venture to say that there are no abler surgeons (our correspondent probably would not go so far) to be found in the world than some of the eminent men who adorn the Indian medical establishment, whilst our ranks have furnished a physician competent to sit side by side with delegates from European nations for the discussion of subjects of world-wide importance.

Since we wrote, a Fayrer, a Goodeve, and a Waring have stood forth as champions of the reputation of the old Indian Medical Service: and now last, but far from least, a Macnamara gives to the profession so useful and extensive a manual on ophthalmic surgery that it has been pronounced, by competent authorities at home, to be by far the best work of the kind published. To say that it supplies a gap in the series of the Messrs. Churchill, is to give it small praise. It is no mere compilation, but a work displaying considerable originality of thought, whilst it is full of practical matter drawn primarily from the author's own experience. It is, moreover, beautifully illustrated by colored delineations of the different diseases of the organ of vision, as seen by the naked eye and the ophthalmoscope. These are reproductions of Liebreichs exquisite drawings.

Dr. Macnamara's manual is, in fact, *the* book on diseases of the eye, and it possesses the additional advantage of being applicable to the study of disease as well in Native as in European eyes. No medical man's library can henceforth be considered complete without it.

Notices to Correspondents.

Communications have been received from

DR. N. C. MACNAMARA.

BALES, ESQ.

DR. CASSON FRANCIS.

A PASSED VETERINARIAN.

A CIVIL MEDICAL OFFICER.

OLD CHUM AND DUFF.

The following contributions are postponed:—

"A Passed Assistant," by DR. DE CRUZE.

Short Notices of Recent Books.

A Manual of Ophthalmic Surgery. By C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital, and Lecturer on Ophthalmic Medicine and Surgery in the Calcutta Medical College. London: Churchill. 1868.

Of the [illegible] by Mr. Macnamara [illegible] Mr. Macnamara [illegible] series. Its illustrations are both numerous and accurate, and it has [illegible] highest terms of praise; it is of the author's labors in preparing this manual. Mr. Macnamara has spared no pains in making the book thoroughly representative of modern ophthalmology; and though he has given reference to nearly everything of [illegible] writers are veritable stumbling blocks. It would be out of our power, in the brief space at our disposal, to do anything like justice to this work, which is really one of the most thorough- [illegible] the word therapeutical in its widest sense, to signify methods of treating. The author intentionally omits notice of the more minute points in pathology, referring his reader for these to the larger treatise of Wecker and Stellwag. It is to questions of diagnosis and treatment that he especially directs attention, and a brief account of the pathology of cataract, then a description and finally a sketch, or rather a succinct statement of the features of each of the various operations now in vogue among ophthalmic surgeons. For example, depression of the lens, solution, flap extraction and its modification, linear extraction, traction, [illegible] these operations is advisable, but he enters a protest against the [illegible] and he urges several very just reasons for his objection to this [illegible] well as by the specialist. In the opening chapter, on the physi- [illegible] gives a certain amount of support to the view by the results [illegible] always wondered how any one who understands the anatomy of [illegible] why he rejects the ciliary muscle as an agent in accommodation. Helmholtz's experiment, showing alteration of the images reflected [illegible] ing a very slight movement of the eyeball. On the other hand, there is the remarkable fact that in animals whose range [illegible]

[illegible] By GEORGE FOWNES, F.R.S., late Professor of Practical Chemistry in University College, London. 10th Edition. London: Churchill. 1868.

[illegible] eager teachers of chemistry. The previous editions had not been *en rapport* with the advance of chemical fact and theory, and hence for some years "Fownes' Manual" fell into disrepute among lecturers. In its new garb, and under the editorship of Mr. [illegible] of text books. Nominally, this edition has been issued under the [illegible] intrinsic evidence to shew that it is to the latter alone that we owe the manifold improvements which the work has undergone. This edition contains about 200 pages of new matter. Old para- [illegible] excised, and fresh matter has been infused into the chapters, [illegible] "General Principles of Chemical Philosophy" has been written for this edition. The classification of the substances is different from that heretofore pursued. After the non-metallic elements (we wish they had an absolute, not a negative title), we find the metals arranged as monads (potassium, iodium, etc.), dyad, (alkaline earths, copper, mercury, etc.), triads (thallium and gold), *tetrads* (platinum for lead, etc.), pentads (arsenic and bismuth), and hexads, as tungsten and wolfram.

Under the head of organic chemistry, which, in our opinion, ought no longer to exist as a distinct division, we find the many curious substances *called* organic arranged as follows:—(1) hy- [illegible] selenium ethers and alcohols; (6) acid halides; (7) organic [illegible] ammonium compounds; (14) phosphorus, arsenic, and antimony compounds; (15) organo-metallic bodies; (16) amides; and (17) amic acids. This list includes nearly all substances of organic origin, but there are still some whose proper position is so difficult to define, that they have been left out of consideration. Before concluding our notice, we must refer to the early chapters of this work, which, as formerly, deal with experimental physics. These are not so good as the more purely chemical parts, still they are "up to the time" as concerns discovery. It would have been better, however, had they embraced a clear description of the method of spectrum analysis, and of Sorby's very interest- [illegible] the absorption bands of colored liquids. On the whole, as we have already said, the new edition of Fowne's Manual is most creditable to its Editor.

[illegible] By J. H. JAMES, F.R.C.S. London: Churchill. 1868.

The author, in consulting Holme's "System of Surgery" lately, [illegible] have for some time past been discarded as useless at St. Bartholomew's Hospital and some other hospitals of London." Mr. James then relates the cases of a number of cicatrices, all treated [illegible]

English Correspondence.

[illegible]

London, November 2nd, 1868.

[illegible] the Liberals have obtained a majority of about a hundred; [illegible] Hennessy [illegible] who was [illegible] Dease, [illegible] by [illegible] Mr. J. Stuart Mill has not [illegible] Dr. Sanderson [illegible] Kay's [illegible] still, had some of his supposed medical supporters been a little [illegible] Dr. Cameron, who was [illegible] by a large number of the Liberals of Ireland, was

thrown out because of his expressed desire to see the Irish Church disestablished. When this view of his became known, formidable opposition was originated by his more Conservative brethren, who forthwith issued a signed document to the effect that they could not support Sir Dominic's candidature. Hence the failure [illegible].

Under the circumstance of this loss, it is difficult to know what will be done upon the question now so much mooted in professional circles—the question of direct representation in the General Medical Council. I doubt not most persons will agree with me in thinking that the present "Council" is a most anomalous and unfairly constituted body, which in no adequate or proper manner represents the interest of the medical body. Direct representation, then, appears the only remedy. But what chance is there of obtaining this from a House of Commons, where medicine is so feebly, and to so small an extent, represented. Mr. Vanderbyl is certainly a useful member, but we need not expect much in the way of advancement from either the eloquence or the persuasive arguments of Dr. Brady.

The two great most scientific questions in the *topic* of medical journalism are blood-letting and tobacco-smoking. The subject of blood-letting has been reopened by Dr. B. W. Richardson in a long article in the *Practitioner* for this month, in which the author all but gives the rank of panacea to blood-letting. Dr. Richardson's arguments on the purely scientific point of the relation between venesection and the supposed reduction of inflammation are by no means satisfactory. His arguments from practical experience will have more influence; but even these are founded rather on the vague statistics of the ancients than from many exact returns from modern practice. For myself, I cannot concur in Dr. Richardson's opinions; but, as his article is written in his usual brilliant and forcible style, I doubt not the well-read many disciples among the rural practitioners. He advises blood-letting in typhus, spinal irritation, pain, the acute pain of membranous croup, sun-stroke, non-dropsical anæmia, congestion of brain from weak vessels, concussion, cases of embarrassed heart, convulsions, and, finally, hæmorrhage. The tobacco question has been opened by Mr. G. Henry Lewes—Goethe's biographer, and Marshall Hall's opponent on the reflex-action theory—in an article in *St. Paul's Magazine*. Mr. Lewes, on the *medio tutissimus* principle, shows, in a cleverly written, spirited, and logical essay, that tobacco is neither a universal poison, nor a perfectly innocuous substance. The late Sir Benjamin Brodie, in his papers on tobacco, stated that when a drop of the concentrated empyreumatic oil was placed on the tongue of a cat, it threw her into convulsions. Hence, he somewhat illogically reasoned, smoking must be extremely injurious in all cases. He forgot an important axiom which is now very generally admitted by therapeutists, that increased dose of a drug does not merely imply increased action of the same kind as produced by small dose, but actual alteration of effect. M. Pelikan, of St. Petersburg, demonstrates this in the case of oxalic-acid; and Anstie's researches have equally proved it for alcohol. We may therefore even, on *à priori* grounds, admit the same for tobacco, and deny its generally poisonous nature. In point of fact, if tobacco is asserted to be universally destructive of health, its enormous consumption with an increasing life-rate is a certain reason for alteration of the proposition. The *Lancet* of Saturday has a very able leader on the subject, from the pen of our most accomplished and earnest student of [illegible] questions. It is worth reading.

St. Thomas's Hospital (the new building) is making vast strides towards completion: already from the immense and bewildering forest of spars the first story begins to be shadowed forth; and as no less than seven hundred pairs of hands are busily engaged in the work, we may soon hope to see the most ornamental and best-placed of all the London charities actively dispensing its hospitality.

When speaking of [illegible] matters, I forgot to mention, as a "set-off" against our losses in Dr. Sandwith's and Sir D. Corrigan's defeat, that the University of London returned Mr. Lowe. This is a step in advance. It is really to Mr. R. Lowe that we are indebted for the medical department of the Privy Council, a species of state medicine which is the only one we have—which already, under the experienced and discriminating guidance of Mr. Simon, has borne such good fruit for sanitary science. Mr. Lowe has the deepest interest in the future of medicine. I remember, in his address to the students of St. Mary's Hospital in May last, how well he [illegible] for the establishment of [illegible] mental commissions for the investigation of special disease." "Look," he said, "at the report on cattle-plague: have we such an exhaustive memoir on any single human malady?" This return, therefore, looks hopeful.

On Saturday last Mr Carlyle's term of office as Lord Rector of the University of Edinburgh had expired; the usual election took place, and terminated in favor of Mr. Moncrieff, the Dean of the Faculty of Advocates. The contest was at first between Mr. Lowe, Mr. Ruskin, and Mr. Moncrieff. Mr. Lowe retired after about a quarter of an hour, and the tussle was kept up between the other two, the final result in number of votes being for Mr. Moncrieff 607, and for Mr. Ruskin 425.

Dublin has lost one of its brightest medical luminaries by the death of Dr. Hardy. But a couple of weeks since Dr. Hardy was elected a Fellow of the King and Queen's College of Physicians; and now, in the very prime of life, he has been removed from among us. He held a very high rank in Dublin as an obstetrician, having been President of the Obstetrical Society, ex-Assistant Master of the Rotundo, and Physician-Accoucheur to Stevens' Hospital. I have to record another gap in our ranks, which has a number of very sad associations. I refer to the death of Dr. Thomas Hillier, late Physician to the Skin Department of University College Hospital, and medical officer for St. Pancras. Dr. Hillier was equally respected and beloved by all who knew him. He was a most conscientious and earnest physician, and a very able and active medical scientific man. His death was caused by nervous shocks, which followed a severe accident a fortnight previously, by which his brother lost his life. His life has been sketched in the *Lancet* by a loving hand, by one who knew him as student and physician, and who has given a very sad and touching picture of the painful circumstances by which he was taken from us.

A new scientific weekly journal, called *Scientific Opinion*, has just been started by the Messrs. Wyman, of Great Queen Street; it is intended to effect for men of science what public opinion does for the general world of literature. The first three numbers have been issued, and they show what a want exists for this class of journal. The matter consists of selected papers from the various English and foreign scientific periodicals; original correspondence; reviews of books; a copious list of all the French, English, and German scientific treatises published during the week; reports of all the English societies and foreign academies; and, finally, a page of very interesting notes and queries.

Progress of the Medical and Collateral Sciences.

Action of Salts of Iron on the Blood.—In the *Journal of Anatomy and Physiology* for November, there is an extremely interesting paper, by Dr. James Blake, of California, on this subject. Some of the distinctions drawn by the author between the protosalts and the persalts are of the highest interest. For example, he tell us that the protosalts evidently tend to diminish the irritability of the heart, while the persalts seem to have little or no effect of this kind. The action of the protosalts on the nervous system shews itself in slower respiration, a peculiar state of prostration, in which the animal does not wish to move. Again, the protosalts give rise to changes in the blood, which prevent its coagulation after death; while the salts of the peroxide do not at all interfere with its coagulation, but indeed, as Dr. Blake thinks, render the clot firmer. The quantities required to produce death (in dogs) are different for the two sets of salts, for while from 70 grains of the protosalt can be held in the blood without serious consequences; 5 or 6 of the persalts will destroy life. These experiments of Dr. Blake [illegible] but carefully and [illegible] most [illegible] [illegible].

Prevention of Convulsions.—In a recent number of the *Journal of Anatomy and Physiology*, Dr. Brown-Séquard [illegible], in which irritation of the sensory nerves was found to allay tetanic spasm and convulsions. The irritation of the sensory [illegible] by various means [illegible]. He considers that this is an instance of the same kind of action that [illegible] the stoppage of the [illegible] by irritation of the vagus. He is also of opinion that the arrest of an epilep[illegible] by [illegible] [illegible] [illegible] [illegible]

effect of the first one.

consequences.

made the subject of a very valuable paper by Professor Scanzoni,

thinks a very sanguinary one. Professor Scanzoni's paper is

31st, and ought to be read by those interested in the question. The professor attributes all the abnormal contractibility of the

from the unsuccessful copulative efforts of an inexperienced husband. His treatment is, therefore, in accordance with this

in compressers placed between the labia. After a few days, when much of the tumefaction has subsided, the sore parts of vaginal orifice are touched daily with a solution of nitrate of the silver (20 grains to the ounce). Next, a suppository, about the size of the little finger, composed of extract of belladonna and cacao butter, is introduced into the vagina. After about three weeks of this treatment a cure is effected; then Professor Scanzoni commences his process of dilatation. This he effects at first by the use of the conical glass speculum. There is in the commencement a little difficulty in introducing this, but a little force

freely, and may be left, therefore, according to the patient's sensations, for from ten minutes to half an hour, or an hour.

baths, and applies the nitrate of silver when requisite. At the

sceptical as to the experience of the husband in these cases,

du pénis dans le vagin."

Maisonneuve's Method of Treating Stumps after Ampu-

red by the exhaustion of air from the stump, were

ment of the capillaries where the pressure ceases; (2) the amount of suction exercised upon the cut tissues every time the air

into the receiver, much of this fluid consisting of reparative

normal action of the skin, there is no evaporation, and the

M. Maisonneuve's plan, firstly, that no manometer was employed, as M. Maisonneuve insists on, to estimate the exact degree

M. Maisonneuve bandages them in the usual manner, and saturates the bandages in antiseptic liquid. Had this been done,

have been avoided.

The Law of Contagion.—At the meeting of the French Academy of Sciences on the 9th of November, M. Chauveau presented a third and last memoir on this subject, especially in relation to cow-pox and small-pox. M. Chauveau asks how it is that in diseases of the same order as those mentioned, the first is transmissible from a distance and the second is not? He explains this difference by asserting that the quantities of infecting corpuscles is different in the two diseases. If cow-

some of these corpuscles to enter the air respired by animals, but more readily still by mixing them with the food or drink.

Tubercular Meningitis detected with the Opthalmoscope.—M. Bouchut alleges that by means of the opthalmoscope he can, in this disease, detect the presence of tubercles on the retina and choroid. Several autopsies have confirmed his observation. He has also detected the tubercles in infants, in whom

pointed out what he stated to be a new affection, which he terms miliary choroidean atrophy.

The Muscular Structure of the Auriculo-Ventricular Valves.—Herr Dr. Gussenbauer recently laid a memoir before the Royal Academy of Vienna on the above subject. He showed that the opinions of Kurschner and Joseph were correct, and that muscular fibre in these structures is not confined to animals, but is found in man also.

The Pathology of Œdema.—Herr Rokitansky lately pre-

the subject of the œdematous alteration of the skin. He showed that the injection of nitrate of silver and Prussian blue into the lymphatic vessels of the œdematous skin of the fingers, the knee, and the scrotum, proved that these vessels formed in the corium multiple layers disposed in net-works.

The Physiological Action of Ethyl-and Methyl-Strychnia.

by Messrs. Fraser and Crum-Brown, of Edinburgh, and has been taken up—apparently independently, at all events without

French chemists. These observers arrive at very many identical results with those obtained by the Scoten physiologists.

frog and soon showed its effects. These effects, however, were quite different from those of ordinary strychnia. At first the

became completely paralysed, so far as locomotion was concerned. Respiration had ceased, but, strange enough, the heart continued to

48 hours, and then recovered. In the case of dogs, the effects were different. It took much larger doses to produce any result, and then convulsions were originated. These were not, however, like tetanic spasms, and they came on slowly, and at very long

iodide of strychnia killed a dog, it took 20 centigrammes of ethyl-strychnia to even produce non-fatal convulsions, and twice this

November 2nd.

The Structure of the Placenta.—Herr W. Ercolani has

states that the recent villosities of this organ are not invested with epithelium. They are prolonged into filaments, which, dilated, become hollow and filled with matter, but in which neither nitrate of silver nor any other agent reveals the limits of distinct cells. At this period of its development the cell is composed only of a hollow mass of proto-plasm studded with nuclei, and connected with which is one blood vessel. It divides, later on, into many segments. Herr Reitz affirms the

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF CERTAIN REPUTED ANTIDOTES FOR SNAKE-POISONING

BY J. FAYRER, M.D.,

Professor of [illegible], Medical College of Bengal.

PRESENT.—Dr. [illegible] Dr. Ross, Dr. Fayrer, Dr. J. Ewart, Dr. D. B. [illegible], Col. Showers, Mr. W. T. Blanford, and Mr. [illegible].

16th January, 1869.—The following experiment was made in the [illegible] with the view of testing [illegible] Showers in his letter, and in the [illegible] Gwalior in September, 1868, and published in the [illegible] (1869, number of the *Indian Medical Gazette*.

Colonel Showers [illegible] kindly brought the man, who [illegible] and expressed his wish [illegible]. I accordingly, with the assistance of the [illegible] provided to make the [illegible] had been all went to make [illegible] essay on the [illegible], and the [illegible] on which the experiment was [illegible].

It is right to note that he says, on the day of the experiments, that the antidote he has now with him is not the most potent [illegible] the subject, as he had not been able to procure it, as the drought had prevented the [illegible] it is obtained. He expressed his belief that the drug he had with him would prove sufficient to counteract the influence of snake-poison. Accordingly, a pariah dog was made over to him, and he administered to it a small piece of whitish-looking root, pounded and put in a piece of meat. The dog, [illegible] full-grown pariah, ate readily. The *kelaree* next selected, from a basket of fresh Cobras, a full-grown one of the spectacled variety, which was made to close [illegible] the dog's hind leg, [illegible] the skin of the thigh, and in the thigh. The dog shewed signs of pain when bitten, but had not evinced the least fear of the snake when it was brought near him; it was probably the first he had seen. The experiment was performed in the [illegible].

EXPERIMENT No. 1.

The antidote was given to the dog in a piece of meat at 11-55 a.m. of the 16th January. At 11-59 the dog was bitten by a full-grown spectacled Cobra, of the variety known by the natives of Bengal as the *Gokurrah*. The snake was made, by a snakeman occasionally employed by me, to close its jaws three times at the fold of skin in the right thigh and in the thigh itself. We ascertained that the Cobra had only one effective poison fang, the other being broken, but with this he [illegible].

[illegible]—Bitten leg weak; partially paralyzed.

12-1.—Dog [illegible]; shews indisposition to walk about.

12-3.—No pain apparently felt; is drowsy; refuses to be roused, and then walks about, but shews a tendency to lie down.

12-5.—[illegible] he walks, but soon lies down again.

12-13.—Breathing catching; is drowsy.

12-17.—[illegible]; cries [illegible] when [illegible].

12-20.—Convulsed. The [illegible] mouth and nostrils.

12-21.—Lies on the left side; universally convulsed; eyes glazed; pupils dilated, and insensible to light.

12-22.—Defecates; is pale and bloodless about the mouth and lips.

12-23.—Involuntary micturition.

12-27.—Respiration ceased.

12-31.—Dead.

Ceased to breathe three minutes before heart ceased to beat. Bitten at 11-59. Died at 12-31. Death in 32 minutes.

The above notes were taken by Dr. Ewart, who carefully watched and noted all the symptoms, and he adds the following remarks:—"There is evidence of a double [illegible] through the nerve centres, the heart continuing to beat after the respiration entirely ceases, which can only be [illegible] irritability and its own ganglionic supply, and quite independent of the medulla, which, in all other respects, is *hors de combat*, from three to four minutes before the heart actually ceases to pulsate."

This experiment, though unsuccessful in demonstrating the good effects of the reputed antidote, cannot be considered conclusive, as the man stated that it was not the most potent agent he was in the habit of using, nor, indeed, should I consider any single trial as proof either for or against the good effects of the drug, however it had resulted. Many and repeated experiments are necessary before any definite opinion can be [illegible] one, it is expedient that the experiments should be made again: and as Colonel Showers has expressed a wish that the man should have further opportunity of exhibiting his antidote, I think that, on a future occasion, more certain results may be obtained.

Having studied the effects of the poison in many animals, and having formed conclusions as to the nature of the cause of death, I am sceptical on the subject of antidotes, and fear that the hopes of those who are most sanguine on the subject will not be realized. I am not the less anxious though to become acquainted with whatever may be of service in the treatment of snake-bites, whether prophylactic or therapeutic, and I shall be as glad to record any facts that tend to throw light on the subject, as to admit the potency of an antidote when I see it proved. Colonel Showers informs me that the *kelaree* makes the following objections to the experiment:—

First, that he was not fully prepared.

Second, that the antidote was not the most reliable one he knows of.

Third, that the animal was bitten three times by the Cobra.

With reference to these, I would remark that the time for the experiment was appointed some days previously; that he was invited to make any previous preparation he thought desirable; that the room in which the experiments were performed was placed at his disposal, and that certain snakes were also made over to him; that he locked himself in for some time the day before making his preparations; and that Mr. Sceva was most careful to see that all he wanted was procured, and all his wishes carried out on the day of the experiment. The animal bitten was placed at his disposal to do what he liked with, and all his wishes were complied with to the minutest details. If, therefore, anything were wanting, the fault was his own.

Secondly, with reference to the antidote itself, it was suggested by himself, and he certainly expressed his belief that it would prove efficacious; or else why did he administer it?

[illegible] doubtful.

and in about the same time as other dogs that had not taken any antidote at all, and were bitten in the same way by a Cobra.

declares himself to be ready and fully prepared.

EXPERIMENT No. 2.

A[illegible] 12-13, a kid of about 5 or 6 months old was bitten three times on the hind-leg by the same Cobra that bit the dog in the last experiment.

The object was, that to the extent of the poison not taking effect in the dog, the activity of the poison might be demonstrated by its action on the kid. Had the dog survived, and the kid died, would have been so far confirmative of the efficacy of the antidote.

12-15.—Dog weaker, generally paralyzed.

12-16.—Breathing stertorous, but awoke when roused; defecation.

12-20.—Dog recovered, but fore-part of body paralyzed.

12-25.—Almost paralyzed; convulsed.

12-29.—Convulsed.

12-34.—Heart beats 96 per minute; respiration almost gone. Eyes glazed, pupils dilated, insensible to light.

12-36.—Death. Heart beat for two minutes after respiration had ceased.

Bitten at 12-13. Dead at 12-36. Death in 23 minutes.

The activity of the poison had no doubt been exhausted by the previous biting of the dog, otherwise a young animal like the kid would have probably succumbed more rapidly.

The following experiments were made to test the efficacy of the injection of liquor ammonia as an antidote. They will be repeated with various strength of the ammonia in solution.

EXPERIMENT No. 3.

At 12-33 a pigeon was inserted in the thigh with Cobra poison recently taken from the living snake. Two drops were inserted into the muscles of the thigh with the hypodermic syringe.

12-37.—Is reported by the pigeon's keepers as slightly convulsed and drowsy.

12-[illegible].—Drooping and; the eyes look as if about to sink when roused. Ten drops of liquor ammonia, diluted with three times the quantity of water, injected by means of the hypodermic syringe into the same thigh.

12-39.—Very drowsy; rests the point of the beak on the ground, has retracted the head well over the opposite shoulder; head falls over.

12-40-30.—Gasping respiration.

12-41.—Dead.

Death occurred in four minutes—rather a long period for so small and sensitive a creature as the pigeon; but the quantity of poison was small (2 drops), and all that was not thoroughly inserted.

In this instance, I do not believe that any beneficial effect was produced by the injection of the ammonia.

EXPERIMENT No. 4.

12-50.—A [illegible] pigeon's thigh and the femoral vein exposed, in order that the solution of ammonia might be readily injected with the hypodermic syringe; it was then bitten in the opposite thigh by a fresh full-grown spectacled Cobra.

12-56.—Dog weaker with staggering gait; the bitten limb is weakened.

12-57.—[illegible] of liquor ammonia, diluted with [illegible] water, injected into the femoral vein.

1-0.—[illegible] recovering sensation.

1-3.—Dog [illegible] gait, weak in hind-quarters.

1-6.—Incontinence of urine.

1-7.—Made him swallow 5ii. of liquor ammonia, well diluted with six parts of water.

1-8.—Pigeon [illegible] [illegible].

1-12.—Lying flat on the left side.

1-15.—Staggers. When roused, is not quite so drowsy; refuses water; lies down, whining and moaning; stretches out the legs as though in pain.

1-23.—Pigeon [illegible] [illegible] weak in the hind legs, but more so in the bitten than the other limb; still moaning.

1-26.—Paralyzed completely in the posterior extremities; jerking movements of the head. Respiration, 44; pulse, 100.

1-29.—Respiration 28; pulse irregular, fluttering, and difficult to count; convulsed; is very restless; convulsive movements of the diaphragm; gasping; spasm of diaphragm; pupils dilated, insensible to light.

1-30.—Struggled and changed the position to the other side. Respiration, 12 in the minute; pulse very irregular; cannot be counted from subsultus tendinum.

1-34.—Defecations. Heart beats 104 in the minute; fluttering irregular pulse; respiration has ceased; muscular twitchings.

1-37.—80 beats of heart in the minute; muscular twitching.

1-38.—Heart beats faint, slow but perceptible.

1-38-15.—Heart ceased to beat; [illegible] respiration ceased.

Dead in 44 minutes and 15 seconds.

Death was rather [illegible] in this experiment than in that of a full-grown parish dog bitten by a full-grown and fresh Cobra. It would appear, therefore, that the ammonia may have been so far beneficial. The benefit, however, is very small; but further experiments may prove that, given in larger quantities and more frequently, it may be of service.

ON CHOLERA.

By C. MACNAMARA.

[illegible] *Medical Gazette*.

[illegible] [illegible] 37, [illegible] 74.

I [illegible] [illegible] [illegible]

however, of mild character, and the mortality less than usual. The disease has always been prevalent at Dinapore, and may be termed rather endemic than epidemic." We hear but little of cholera at Benares, or Allahabad, in 1848; but there was a terrible outburst of the disease at Cawnpore among the men of the 1st Bengal Fusiliers.

The Agra circle was affected to some extent at the same time, for Dr. John Murray endorses Sub-Assistant Surgeon Bhowan Doss Bose's remarks in the dispensary returns dated October 1st, 1848, to the effect that "cholera, though of a mild type, was generally epidemic from the latter end of August. It continued in the city (Agra) till the end of September, and then took its way towards the cantonments and the adjacent villages."* The disease did not, however, spread to the troops stationed at Agra; the Punjab, and the country to the north-west of Agra, were free from the disease throughout the year 1848. Dr. F. Corbyne, in his annual report from Lahore, remarks upon the great deficiency of rain throughout the Upper Provinces, and the peculiarly healthy nature of the season.†

Towards the end of the year another outbreak of cholera occurred among the 62nd Regiment Native Infantry, which left Dacca for Monghyr in November, in a fleet of country boats. Before quitting Dacca, it was ascertained some of the boatmen had died of cholera. The evening after the regiment embarked, the first case occurred among the sepoys; the disease rapidly increased, and Dr. Cumberland, the medical officer in charge of the regiment, reported to the Medical Board that the subsequent confusion and mortality among the men was so great, that it was impossible for him even to collect data as to the number of deaths that occurred, and much less give any detailed account of this terrible outburst of disease.

Unfortunately, the proceedings of the Bengal Medical Board have never been compiled for the period now under review; but we may nevertheless trace the history of cholera in this presidency from the published report and returns of the Government dispensaries. From these documents, dated 1st October, 1849, I find that, from Midnapore, Sub-Assistant-Surgeon Issur Chunder Gangooly reports "pestilential cholera prevailed to such a fearful extent in and about the station, that its effects in thinning the population were scarcely less powerful than in 1832." The total amount of rain in June was about 8½ inches, that of the same month last year (1848) was 14½ inches; the total number of rainy days in June of both years was, however, equal. The rains set in on the 19th May, since which date to the end of the month there was scarcely a fine day, the partial and unrefreshing showers being productive of more harm than good. From the 5th to the 9th of June the rain was heavy, and from the latter date to the 15th of the month cholera was at its height.‡

From Baboo Gobin Chunder Dutt's report of the Pooree dispensary, we learn "cholera broke out during the Ruth Jattra festival, in July. The pilgrims suffered principally." In Gyah, "cholera was not so prevalent in the town during the period under consideration as on former occasions, although its severity was very great in the district, where it first made its appearance in April, and continued till August." In Patna, the disease "raged with great virulence in May and June;" it was very bad again in August and September.

From Tirhoot, Dr. Kinsey reports that, during the six months ending 1st October, 1849, "cholera had carried off numbers of the population throughout the district."§ Sub-Assistant Surgeon Nimadub Mookerjee asserts that the disease "invaded the city of Muzzuffurpore in the month of May, and, although the duration was not long, yet the ravages were comparatively frightful in the adjacent villages, specially those lying on the southern boundary of Mirzapore. The devastation was terribly frightful; it was reported that the inhabitants fled for refuge to other districts, forsaking their habitations, cattle, and property."*

Sub-Assistant Surgeon Tarachand Banerjee reports from Allahabad, "towards the latter end of May cholera broke out with its usual severity, and carried away many; this disease prevailed epidemically throughout the station and surrounding country."

In Allahabad and Cawnpore, cholera appeared among the European troops in July and August, and "was raging in the city" during these months.

There were no less than 136 cases and 88 deaths among the convicts confined in the Jubbulpore, Saugor, and Nursingpore jails during the year 1849, and the disease was very prevalent among the inhabitants of these districts.

Dr. Leith informs us that "cholera made its approach (to Bombay) from the eastward towards the end of the rains of 1849. It had prevailed more or less severely in the southern "Malwatta" country, and the neighbourhood of Sholapore, in the month of May, and, in the middle of July, in the Ahmednuggur and Poonah collectorates; but it did not then extend further northward.

During the week preceding the invasion of the epidemic, rain, which had been unusually abundant, fell daily, and at the rate of 1¾-inch a day, and the south-west monsoon blew during the same week with a force varying from 1½ to 5lbs., or an average of 3½lbs. on the square foot, which is equivalent to a velocity of more than 25 miles an hour, in a direction contrary to that in which cholera advanced.

The first four fatal attacks took place in the three different divisions of the island; and from 4th to 12th August the fatal cases that occurred, fifteen in all, were scattered over four divisions, six districts, and twelve streets, some of which were widely separated from each other by densely-peopled portions of the town. These fifteen sufferers belonged to seven different castes, and eight different occupations, and none of them had recently arrived in Bombay."

Throughout the year 1850, cholera was reproduced with considerable virulence over the whole of Bengal proper; Cachar, Sylhet, and the eastern districts suffering very severely.

In August it "raged with great violence at Jubbulpore;"† the prisoners were attacked by the disease, but, being speedily removed from the jail, it disappeared from among them. Dr. J. Squire reports the prevalence of cholera at Seuni and Baitool‡ throughout the hot and rainy season. It is evident, therefore, that the south-western districts of the Bengal presidency were under the influence of epidemic cholera in 1850; and at the same time the disease was severely felt in Bombay, as is shown by the following table:—

YEARS.	No. of deaths registered from Cholera in Bombay.
1848	69
1849	2,269
1850	4,729
1851	1,020
1852	1,175
1853	1,339

Dr. W. Mackenzie, C.B., Principal Inspector-General of the Madras Medical Service, has been most kind in furnishing me

* Half-yearly Reports of the Government Charitable Dispensaries, 1848, p. 496.

† MS Proceedings of the Bengal Medical Board.

‡ Half-yearly Returns of the Government Charitable Dispensaries from 1st April to 30th September, 1849, p. 4.

§ Dispensary Reports for 1849, p. 20.

* Dispensary Report for 1849, p. 60.

† MS Proceedings of the Bengal Medical Board for 1850.

‡ Ibid.

In 1851, the disease broke out in the south of Persia.

cholera, after having ravaged Bassorah and the Persian frontier, has arrived at Bagdad, where it is committing great ravages. In 20 days it has attacked 1,008 persons."*

In August, 1852, the disease was generated in the province of Azerbijan, ravaging its capital, Tabreez, with great fury. It spread to the shores of the Caspian, but did not pass into Russia

The question naturally arises, as to the origin of this outburst of cholera,—did it spread from the Persian Gulf up the Tigris to Bagdad, and so to Tabreez, or did it travel, as on previous

our knowledge on this point is very defective.

over the North-Western Provinces in 1850-51. The civil surgeon of Muttra, in his Jail Report for 1850, expressly states the

siderable, especially among the pilgrims.

From the half-yearly dispensary returns ending 1st October, 1852, I find that "cholera prevailed to a very great extent in July† at Bareilly." At the same time it broke out in the Moradabad district, and "prevailed there epidemically to the

"In the early part of 1852, extensive works of irrigation

Several thousand workmen were collected there from the neighbouring hills. Cholera broke out among these people with great virulence, and they fled panic-stricken to their

journey in the interior of the hills. Up to this time, cholera

mountains. This is a fact that was carefully inquired into and thoroughly ascertained. Many of the work-people who fled from Kumaon died on the way to their homes; many others were attacked when they reached their villages. There cholera broke out among the other inhabitants of the villages, commencing, in very many instances, in the families of the men

time cholera was entirely confined to places which had been in direct communication with persons suffering from the disease; but in the course of a few weeks it had become impossible any longer to trace such connection and cholera became generally epidemic through the hills."‡

In Kumaon, it "made great ravages," appearing at Almorah from May till the end of July.§ It was fearfully bad at

full of rain, the interior was visited by cholera, which was strict-

people. From the intelligence received from W. Edwards, Esq., and the Reverend Mork, of Kotgurh, we immediately sent a native

people occupying those hills. At about the same time cholera broke out in the western confines of Simla, at Jottogh, whence it entered the station, but did not commit much damage among

case of blue or spasmodic cholera at Lahore." From his returns, however, it appears "cholera bilinosa" was more common.

At the same time, the disease was ravaging over Central India and Bombay, and from thence to the Persian Gulf, it was being generated from east to north-west, and over the Punjab and Himalaya; but in this direction I am unable to trace it any further. Supposing, however, the disease to

—through Cabul and Mushed to Teheran—it would have appeared in this latter place in the summer of 1853. And, in fact, a fearful outbreak of cholera occurred in the north of Persia in May and June of that year, which, I cannot help thinking, must have been partly due to an offshoot of the Punjab epi-

to Bagdad and Tabreez in 1852, and it may be the epidemic of 1853, in the north of Persia, was simply a reproduction of

striking with such irresistible force the inhabitants of Teheran, that I am inclined to believe it originated from the sources above indicated, being, in fact, an offspring of the Bombay cholera of 1849-50, and in addition receiving, in all probability,

The question has already been put to me more than once as to the practical advantage to be gained by entering into these details regarding the course taken by various epidemics of cholera in their passage over India, and from thence to Europe and America. It appears to me, however, that this is one of the most important subjects we can possibly study in connection with cholera; for, by accurately defining the various outlets from India which have from time to time been taken advantage of by this insidious enemy of mankind, we may hope to bar its exit from its breeding ground on future occasions; and supposing it eludes our vigilance here, we may still, though with less hope, trust to thwart its advance along its accustomed course, provided we are thoroughly acquainted with its habits. Moreover, the laws which rule its production beyond India must govern its spread from place to place and from man to man in this country; but here, the fact of its being endemic in many localities very considerably complicates its circumstances; and it is with the hope of overcoming this difficulty that I have attempted to describe the phenomena presented by the disease in Europe as well as India.

ally subsided, having, in the meantime, been reproduced over the whole of the south of Persia.

from Persia into Europe in 1853, because the epidemic of

Moscow, and in several other towns in Russia, and also in Prussia. Egypt, Malta, and the Ionian Islands were still under

Indies, consequently we have not the opportunities of defining the advent of the fresh importation of cholera into Europe

It is now, in fact, beyond our power to determine with any certainty when and where the former epidemic ended and the new one began.

We may, however, assert with confidence that cholera of a virulent type was widely disseminated over Russia during the summer of 1853. Sweden, Norway, Denmark, Hanover, and Holland, together with numerous towns in the north of Prussia, suffered from the disease. Nor did the south-eastern and central parts of Europe escape the influence of this epidemic. Numerous places in Bessarabia, Moldavia, and Wallachia, besides the towns of Odessa and Jassy, were attacked in August and the latter part of the year. Piedmont, Barbary, and certain districts of Portugal were affected. France was under its influence in the autumn, but had suffered considerably from choleraic disease in the spring.*

In London, a number of *suspicious* cases had occurred in the winter of 1852; but in January, 1853, no instances of death from cholera were registered. As the temperature rose in July, "diarrhœa, as well as the *common* form of *cholera*, became fatal in the metropolis; and a few deaths from *cholera of the Asiatic form* were registered in August in the low districts by the side of the river. Several deaths by the disease occurred in September and October while the temperature fell, and diarrhœa decreased from 723 in August to 283 in October; but during this time the cholera spread and became more fatal, so that the deaths from it were 335 in October and 228 in November, 43 in December, 1 in January, and another in February (1854). There were no deaths in March; only 4 in April, 4 in May, and 3 in June."†

New York and New Orleans were both invaded by an apparently fresh epidemic of cholera towards the close of the year 1853. Mexico suffered very severely, and the disease was widely extended over the whole of the West India Islands.

In 1854, cholera was reproduced throughout nearly every country in the Old and New World. Europe and America had never before been so terribly stricken by this fearful disease, for hardly a single province, and but few large towns, escaped its deadly influence.

Both Varna and Odessa were known to be affected with cholera early in 1854, as well as the countries near the mouth of the Danube; it attacked the Russian and Turkish forces on either banks of this river. Later in the season, the English and French armies were first affected at Varna, where, as we have already observed, cholera existed earlier in the year. Dr. Marroin, the chief physician to the French fleet, assures us that cholera effected its entrance into the Black Sea on the 13th and 14th of July, with the *Primaugult* and the *Magellan*, from Gallipoli. The disease spread from these vessels to the army at Varna. The cases on board the French fleet in Baltchick Bay were by no means numerous till the 7th of August, when constant communication was opened between the fleet and General Bosquet's division of the army, at the time being ravaged by cholera. Two days afterwards, the disease broke out with extreme violence on board the ships. From the 9th of August the epidemic assumed great proportions; in three days it attained its maximum of intensity, and terminated at the end of ten days.‡

Dr. Linton informs us that the disease was said to have been imported into Bulgaria in the early part of June, 1854, by a French vessel arrived at Varna from Marseilles, bringing troops from Avignon, already under the influence of cholera. Several cases of the disease occurred on board the ships on their passage to Varna. From the time the troops landed from this vessel, cholera spread progressively through the town and allied forces, attacking the French and Turks simultaneously, and afterwards the English; no class of people, no description of locality, obtaining an exemption from it.*

In the English fleet it first appeared in the *Diamond*, on the 16th of July, ten days after the arrival of a French steamer from Toulon, in which cholera was prevalent.

"At the time of the outbreak of the cholera, the population of the British fleet numbered 12,572 men. These men, all living under the same conditions, except in one particular, yielded 710 cases of cholera and 397 deaths. Of these cases in the gross, 91·26 per cent. of the men attacked were supplied with water derived from springs at Baltschick, a spot on which French troops had been quartered while suffering from cholera; the troops had washed their clothing at these springs, and the ground for a great distance around was saturated with their excreta. The remaining 9·74 per cent. of the infected were supplied with water partly from Baltschick. Three other crews of vessels suffered from severe diarrhœa. Of these two positively took in water from Baltschick, and the third probably so. In one vessel which used distilled water, water condensed from the steam of the engines, cholera broke out; on examination, it turns out that this water was passed to the tank through a foul hose pipe. In all the other ships supplied with distilled water not a case occurred. The officers in such ships as were attacked were in the proportion of 1 in 177, the men in the proportion of 1 in 16·29.

"We may, perhaps, account for the comparative exemption of officers by supposing that the men partook most freely of the infected water with which the ships were supplied without disinfecting it by heat. The officer took his wine, tea, or coffee; the sailor, his grog. That the disease did not become distributed amongst the crews by mere personal contact with the infected is proved by the fact that in one ship several infected persons were removed, and there was not a case of the disease amongst those who received them."†

The disease commenced in the British army in June; it increased in prevalence for three months and then subsided, disappearing entirely in February, 1855. There were no cases at all among our troops in March; but it burst out again in April, and reached its culmination in June. From this date the disease declined slowly but irregularly.

Dr. Downes, of H.M.'s 97th Regiment, informs us that the troops in the Piræus were all perfectly healthy until the early part of July, 1854, when a French steamer arrived from Marseilles with cholera on board. "Two cases were landed and admitted into the French hospital at the Piræus. Asiatic cholera of a malignant kind now made its appearance and rapidly spread; and cases of the disease occurred in various parts of the town of the Piræus. The disease continued to prevail from the 19th of July to the 26th of August, when it gradually ceased."‡ Greece, from her peculiar relations, had been able to isolate herself from the rest of the world in the epidemics of 1832 and 1849, and had been absolutely free from cholera. In 1854, being under exceptional circumstances, and occupied by a foreign force, over which she had no control, cholera effected its entrance into the country. In 1865, this source of danger being absent, she again entirely protected herself from the cholera which was raging around her.

* Dr. Gavin Milroy on Cholera, Medico-Chirurgical Review, p. 451, October, 1866.

† Report of the Committee for Scientific Inquiry in Relation to Cholera—1854. London, 1855.

‡ Cholera Conference (Constantinople, 1866), Calcutta, 1868, p. 104.

* Medical and Surgical History of the British Army in the Crimea, presented to Parliament by command of her Majesty, 1858, Vol. II., p. 47.

† Dr. B. W. Richardson on the Propagation of Cholera, Transactions of the Epidemiological Society, Volume II., Part II., p. 125.

‡ Medical and Surgical History of the British Army in the Crimea, presented to Parliament by command of her Majesty, 1858, Vol. II., p. 47.

The ambulance corps were, of course, brought much in contact with the sick, and "there was scarcely any portion of the army and deaths in this small body of men far exceeded that of any

With reference to climate influences and seasons, there was and the temperature, the heat of summer increasing its severity; connection with the quantity of rain which fell was somewhat more than a simple coincidence. Drs. Linton and Lawson observed at Scutari "that, in every instance which occurred, the outbreak of the disease seems to have been coincident with change from dry weather to a humid state of the atmosphere; was excessively high."

lated to support the opinion "that cholera was in any degree in lines radiating from certain foci of diffusion." "The determination of the pestilence to run a certain course would seem indeed diverging causes." If so, how are we to account for the fact known a regiment to be exempt from the disease for two years in India, and yet, after leaving the station to proceed on service, five cases, three of which proved fatal, occurred during the first march. In this case, it was curious to notice that, although the regiment subsequently marched, without interruption, nearly 400 miles, no instances of the disease were presented."

Moreover, there was evidently an exception to this rule as to the invariable course pursued by the disease, in the case of newcomers into an infected locality. Recruits and men fresh from England were far more likely to be attacked by cholera than

The symptoms which characterized the disease in the Crimean army were of the ordinary nature. Premonitory diarrhœa very frequently ushered in the attack, but did not usually merge into cholera by gradually becoming more severe. Dr. Muir, of collapse, or violent cramps of the lower extremities, diarrhœa and vomiting being altogether absent." The secondary fever was more than usually severe; in fact, Dr Horne states that of the fatal cases more than one-half occurred during the stage of secondary fever. The total number of cases during the war amounted to 7,575, and of these 4,513 died.

With regard to treatment, the Crimean Commission initiated the dangerous doctrine that "cholera in its severe forms is beyond the reach of medicine, and an utterly incurable disease;" but that, as it usually commences with diarrhœa, the early and passing into cholera.

CIRCUMSTANCES ATTENDING THE DEATH OF THE LATE MR. E. THORP AT SRINAGAR

By Assistant Surgeon H. Cleary.

We have [illegible] at Srinagar :—

[illegible] Srinagar, telling me of the "sudden and extraordinary" death [illegible] letter said he had heard that the deceased had vomited a [illegible] to take rest." There were a number of beggars at the gate, had been making, and after waiting about an hour he got the servant Sadik to go upstairs, where he found his master in a wall, and one arm on the bed, and, as he said, "his look was Colonel Gardner, an old officer in the Maharajah's service, and the native doctor of the dispensary, and they went together position, and quite dead and cold. All said that there had been no vomiting, but that some watery saliva had run on to his doctor rubbed deceased's hands with a little hartshorn and oil, but seeing that he was quite dead, they placed a shawl Gardner's advice, left the body and everything in the room to leave everything in the same state for any length of time till some one came to make an investigation. All this I heard from the above-named people, and also from the boot-maker and the other servants. Mr. Thorp had gone out in the morning without "chota hazri," as he frequently did. The servants all said he had not been complaining of any illness. I then proceeded to examine the room and the corpse. The room to start in two or three days; papers and letters, &c., were scat- half lying, with the back resting against the wall; the right ground, and the head just resting over on the right shoulder.

commencing decomposition. The right hand was pale, and the left, which hung down, was slightly swollen and discolored from decomposition. The expression was quite calm and natural, no distortion of any kind; the eyes half-open, and the pupils natural: the appearance was almost that of sleep. He was fully dressed with the small cap he usually wore on his head. On the bed, by his side, was a diary book in which he had been writing an account of his walk that morning round the "Takht" by the lake. A small pencil, with which he had been writing, had fallen on to the ground just under his head. I examined carefully for vomiting, but there was not a trace on the floor, the bed, his clothes, beard, or in his mouth. There was a little dried saliva on the lower lip. The appearance at once suggested that he had been sitting on the bed, and had got up and slipped down to the ground in a faint, and never moved again or rallied. He had written two pages in the journal, and ended abruptly in the middle of a description of the views on the lake. There had evidently been no struggling of any kind. On examining the body, I found the abdomen and dependent parts were becoming discolored by decomposition; I then opened the chest and abdomen. The viscera of the latter all appeared healthy. In the former the lungs were partially collapsed, showed no adhesions or other signs of disease. They were not congested, but of a dark colour. The pericardium was most tensely distended with an enormous clot of blood, the clot measuring not less than a pint and a half. On removing the clot, I found the heart empty and compressed in shape, and on the side of the left auricle there was a distinct perforation surrounded by a ring of dark tissue, where the blood had soaked into the structures round the point of perforation. On opening the cavities, they were found to contain no blood, though a small amount issued from the large veins. The valves were all healthy; the ventricles and right auricle presented no appearance of disease, though the muscular substance was pale and soft, and had a "fatty" appearance. The left auricle was most extensively diseased, to a degree that I have never seen equalled; the lining membrane was entirely destroyed; the whole surface was covered with bright red granulation, some in the form of long pendant granulation—like clots, one of which was firmly attached to the inner surface of the auricle, and hung down through the valve into the left ventricle. The muscular tissue of the auricle was softened and friable, and in some places very thin, and at one spot was a distinct circular depression or ulcer, which had gone quite through the muscular wall; and at this point the thin external membrane had given way, and the blood had poured out into the pericardial cavity, the effect of which must have been that the blood rapidly filled and distended the pericardium, and the heart's action was arrested. The escape of the blood must have produced syncope followed by complete stoppage of the heart's action from the pressure. The pericardium externally was thickly covered with fat. The body generally was muscular and well nourished.

With regard to previous health, I have seen Mr. Thorp on several occasions during the last two years. He suffered most severely this last summer from acute pain, which he called rheumatism, though there was no inflammation in his legs and ankles. The attacks were on two occasions so severe as to lay him up almost in bed for two or three weeks, and caused great depression of spirits. He never complained to me of any heart disease; latterly he had almost got rid of the rheumatic pain, which had never the character of neuralgia. He was strong and active, and generally mountaineering: but his servant Sarib, an old servant who had known him for years, told me that he looked like master had not lately been able to walk up and so well as formerly, and he seemed to lose his wind and get tired much more easily. During the week before his death, I saw Mr. Thorp several times, and he appeared in good health; and on the 19th he came to see me as I started from Sirinagar, and he then seemed well. The next day he went out to visit a celebrated place of pilgrimage, 18 miles from Sirinagar, and returned the following day.

The most remarkable feature of this case is that such very extensive disease of the heart could go on without giving rise to more marked symptoms, and that he should have kept strong and well and capable of so much exertion. This may be explained by the fact of the valves of the heart not being affected, so that there was no obstruction to the circulation of the blood. The ventricles also being healthy, the power of the heart in propelling the blood would not be much impaired, and until the moment of perforation, the disease gave rise to no decided symptoms. The lesion of the heart most clearly explained the account given of his death. He got up early, took a walk of two hours, (round the Takht, as written down in his journal,) returned, and after speaking a few words with his servant, went up stairs, and an hour afterwards was found dead, without his having uttered a sound or made any noise of struggling. Apparently he sat down on the bed, wrote two pages in his journal, and whilst in the middle of a description slipped on to the floor in a faint and never rallied, as the action of the heart must have been arrested by the pressure of the blood suddenly poured out into the pericardium.

THE following was received shortly after the preceding communication:—

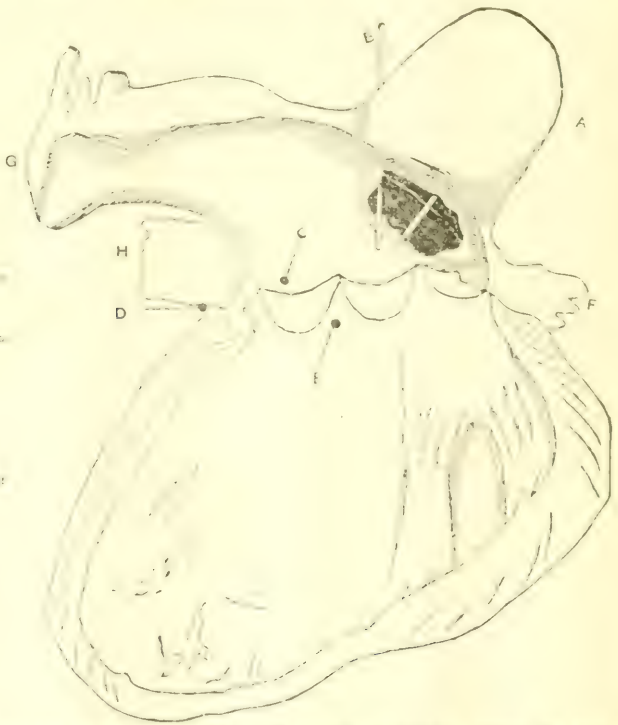
I shall feel obliged by your adding the following supplement to the account I sent you two days ago of the death of Mr. Thorp at Sirinagar:

When I first examined the body I discovered perforation into the pericardium of what appeared to be the left auricle. After removing the heart, I opened first the left ventricle, and passing my finger upwards into the *auricle*, made a separate incision into its walls, and then saw the diseased surface, the ulcer-like perforation, and a long clot hanging down into the ventricle. I then opened the right auricle and ventricle without dividing any of the valves. I was desirous of destroying the relations of the parts as little as possible, as I wished to bring the heart down to Lahore for the purpose of making a more careful minute examination. This I have just had an opportunity of doing in conjunction with Drs. Smith, Scriven, and Brown, and on laying open the left ventricle through the valve into the aorta, it became apparent that what I had taken for the left auricle was in reality an aneurism opening into the aorta just above the *posterior* segment of the semi-lunar valves by a large, well-defined orifice with a firm thickened margin. The aneurismal sac was the size of a large hen's egg. It had thick fleshy walls, and was situated at the base of the heart, just in front of the auricles, and inside and behind the aortic arch. It was *covered* externally by the pericardial membrane. The finger could be passed directly from the aneurism into the ventricle. The tumour projected forward on the left side, and seemed to occupy the place of the auricle and its appendage. The pericardium was pressed backward, flattened and expanded by the aneurism. The perforation opened into the pericardium a little below the reflection of that membrane from the vessels. The valves of the heart were all healthy and entire, as I had before noticed. The left ventricle appeared slightly dilated. There was on the inner wall of this ventricle, just on a level with the lower border of the aortic valves, a small circular

one apparent with the ventricle and aorta were laid open into one.

The disease was that of no exceptional character, but it is remarkable that no symptoms of the lesion of the heart could be traced to the seat of a large clot, until the first true hæmic symptoms until the moment of perforation and death.

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ON CERTAIN DOUBTFUL POINTS IN THE PATHOLOGY OF CHOLERA.

By E. W. A. Lafrance

Assistant Surgeon, Bengal Establishment, Army Medical Staff, Calcutta.

There is an unfortunate tendency abroad in the profession to reach, by guessing, a true diagnosis of and the medicament which must be the treatment of cholera. With a strong desire in this direction, I have been induced to give precedence to the following remarks and conclusions, in the hope that they may receive their full share of consideration and that I even may be found to contribute a practical influence to increase our knowledge of the important subject, pertinent for discussion, which I am not unwilling enough to suppose they may provoke, will bring us a step further upon our bitherto unbeaten path.

That which strikes our attention most forcibly on first confronting a patient suffering from cholera, is the sunken appearance of the face, and the cold clammy skin, shrivelled at the extremities. There is no doubt that the coldness of the skin is dependent on a deficiency of blood in the capillary vessels, and that the sunken condition is due, not to excessive of the watery constituents of the blood, but to the lowered tension alone of the surface itself, which, in condensing the quondam vapory exhalations from the sudoriparous follicles, now converts into *visible* that was previously invisible transpiration. The sunken

appearance of the face, and, in general, of all parts of the surface, supported by any considerable thickness of the cellular layer, together with the shrivelled appearance of the skin of the extremities, sufficiently proves that the watery particles contained in these situations during health have passed into the circulation by the process of *endosmosis*.

If we examine into the state of the circulatory system of patients who die from this disease, we find (1) that the capillaries are empty, (2) the smaller venous trunks moderately full, but (3) the larger ones, as they approach the heart, more or less distended with dark, thickened blood. The condition of the pulmonary surface presents a marked similarity to the appearances just noted. Dr. Goodeve, in the 1st volume of Reynolds' "System of Medicine" (p. 168), has given such an admirable account of these appearances in the lungs, as observed by Dr. Parkes, that I make no apology for quoting it in full. "It was previously supposed that the lungs and heart were gorged with blood, but he (Dr. Parkes) pointed out accurately what was the precise situation of the congestion. He showed that the gorged parts were the vessels of the right side of the heart and the pulmonary artery, in the texture of the lungs, from the right side of the heart to the smaller branches; and that the smaller vessels, the pulmonary capillaries, the pulmonary veins, and the left side of the heart, were nearly empty: in fact, that the blood was not accumulated in the capillaries of the lungs as in common asphyxia, but in the arteries short of them. On section there was free bleeding from the roots of the lungs, but there was little or none in the peripheral parts: they were generally ex-sanguine."

For the present, I defer examination into the state of the abdominal organs, as I shall presently have occasion to show that the condition of the circulation there presents marked differences from that which now forms the subject of our investigation. Let us pause and examine this phenomenon, peculiar, as I believe, to this disease, in which *the blood is not arrested in the capillaries, or smaller veins, but in the smaller arteries*. To what is this obstruction in the smaller arteries due?

We know that the arterial walls throughout the system are mainly composed of elastic tissue, whose action is purely mechanical, and in harmony with all the established laws of elasticity. We further know that this elastic tissue is supplemented by muscular fibres, which are but sparingly distributed to the larger trunks, while they are abundantly dispersed over the walls of the smaller branches; and that inversely the proportional strength of the elastic tissue decreases, according to its distance from the centre of circulation. It is this admirable balance of the elastic and muscular force which regulates the flow of blood through the arteries, and assists its progress onwards through the capillaries. A precisely similar arrangement, we know, exists, to a minor extent, in the veins, but the walls of the capillaries forming the peripheral connexion between the arteria land venous systems have neither of these elastic or contractile properties.

Dr. George Johnson has advanced the theory that, as far as the lungs are concerned, the obstructed condition of the arterial branches is due to spasm of the muscular fibres entering into the composition of their parietes; but while this theory appears to explain, better than any hitherto suggested, the pathological conditions of the thoracic viscera, and *some* of the general symptoms of cholera, it does not sufficiently account for *all* the peculiarities of this disease.

Post-mortem examination shows that the peripheral circulation all over the body (excepting the abdomen) is in a similar condition to that observed in the lungs, and if a certain mechanical cause be sufficient as explanatory of this state in one situation, it will necessarily be applicable to *all*. Anatomical evidence, and conclusions logically drawn from certain remarkable symptoms, establish this fact, that the large venous trunks are distended, and the capillaries empty. Now, if an obstruction more than usual, to the reflux of the pent-up blood in the larger veins, did not exist, we should have full capillaries, *exosmosis* from their walls, and all the well-known consequences of obstructed venous circulation: appearances, in fact, directly the reverse of those peculiar to this disease. Now, let us see if the theory suggested by Dr. Johnson, as explanatory of the condition of the thoracic circulation, is applicable to other parts of the body also.

Let us imagine a column of blood leaving the left side of the heart, circulating through the capillaries and venous system in the natural way, traversing the right side of the heart, entering the pulmonary artery, and there meeting with an unusually constricted channel. A portion of this stream forces its way through into the capillaries and pulmonary veins, but the remainder is thrown back upon the heart. From this state of things, there results deficiency of blood on the arterial plethora on the venous side of the circulatory system. This pressure on the latter, however, is not sufficiently great to overcome the obstructions of the valves in the veins with the spasmodic condition which is now supposed to have attacked the venous branches as well as the arterial. The capillaries, therefore, become empty, because the supply of blood from the arteries is deficient, and because the regurgitant action which *does* take place in the veins is not strong enough to overcome the obstruction it meets. Hence we have *endosmosis* of all the serous particles derived from the tissues which surround the capillaries, both in the lungs and over the surface of the body generally; accounting, in the first situation, for dyspnœa, cold breath, partial aphonia, and anxiety of countenance; and, in the other, for cold skin, with clammy transudation, sinking and shrinking of certain portions of it, and, associated with these conditions, we have, because of the deficient arterial circulation, diminished pulse.

That a similar lesion exists in the head, is evidenced by an absence of all the usual symptoms of cerebral effusion.

There is a phenomenon peculiar to cholera, constantly remarked as occurring in fatal cases of that disorder, not observed in any other disease. I allude to the elevation of temperature, over the surface, which occurs shortly after death, and the filling up of parts previously shrunken. By no theory, hitherto maintained, is this strange condition to be so satisfactorily accounted for. With death, the spasmodic condition of the arteries becomes relaxed, and the warm arterial blood now flows peacefully into the empty capillaries; and these, resuming their natural properties, permit of serous *exosmosis* into the cellular tissue in which they are embedded.

We have now seen that this supposed spasmodic state of the muscular fibres of the smaller arteries and veins is abundantly sufficient to account for the phenomena observed in all parts of the body except the abdominal cavity and its contained viscera; and we shall now endeavour to ascertain how far a similar condition may explain morbid appearances in these. Let us first examine the very urgent symptoms which occur in the stomach and intestines, and compare them with the post-mortem appearances usually observed in these situations. The symptoms are vomiting and purging of fluid matter, which, whether ejected by the oral or anal apperture, bears pretty much the same characteristics in both cases. The post-mortem appearances are, an œdematous condition of the mucous membrane of the stomach and intestines, sometimes associated with considerable venous hyperæmia, which occasionally proceeds to actual rupture of

learn that "the larger hepatic veins, and the branches of the portal [illegible] small intestines, and their small ramification, are full, both on the inferior vena-cava, counting backwards from the heart, that they receive the full weight of the accumulated fluid within the upper portion of the vena-cava, and that, moreover, these veins [illegible] which was not sufficient to overcome more potent obstacles met with in the veins, situated at a greater distance from the centre of regurgitation, might here be strong enough to repel [illegible] venous blood upon the hepatic veins. Simultaneously with this condition, there is a deficient supply of arterial blood traversing the hepatic artery, by reason of the pre-supposed spasmodically contracted state of its walls; and hence, with regurgitant hepatic blood from the hepatic vein, and obstructed arterial supply from the hepatic artery, the whole circulation of the liver is obviously brought to a standstill. Under such a state of things, it is nothing but natural that we should find the portal circulation entirely obstructed, and all the venous branches belonging to this system (none of which are furnished with valves) gorged in the highest degree. At the same time, arterial blood, although in diminished quantity, continues to [illegible] but it is there arrested by the stasis within the branches of the [illegible] fluid is the natural result, accounting fully for the post-mortem appearances above noted, and for the rice-water evacuations which are equally expelled by the stomach and intestines.

[illegible] symptomatic and pathological, observed in cholera, to extend our investigations, and discover, if possible, a remoter cause for the [illegible] of any portion of the muscular apparatus within the body [illegible] centres supplying it; and as, in this case, the irregularity of muscular action lies in the fibres distributed over the channels of circulation, we infer that the cause lies in the sympathetic system of nerves, the arterial branches of which are independent of the cerebro-spinal centres. Nor are other indications wanting to lead to the conclusion that the ganglionic centres of organic nervous supply are more or less under the influence of unusual excitement. The whole of the alimentary tract, from the stomach to the rectum, is thrown into violent activity, and as this is obviously not the result of irritation from without, through acrid discharges exuded into their cavities, (for these [illegible] circulatory system. As regards the liver, it is found, after death from cholera, that the normal secretion of this organ, though undoubtedly diminished, is not totally arrested, for the gall-bladder is generally observed to be full. Microscopic examination of the substance of the liver in such cases has [illegible] tion. The obstruction, therefore, must lie in the ductus communis choledochus; and as there is no other cause to be assigned for this obstruction, we must conclude that it is due to [illegible] less, obtains in the urinary organs. The ureters are closed by [illegible] symptom of ischuria presented in this disease.

[illegible] limited knowledge of its nature induces us to assume it is, some toxic agent which finds its way into the blood, we argue that [illegible] taken into the circulation from without, of stimulating the [illegible] such stimulation results in obstructive phenomena in the circulatory system in the viscera both of the thorax and abdomen, and ultimately culminates in the train of symptoms so peculiar to this disease; or (2) there may be some peculiar conditions, magnetic or electric, in the atmosphere, during cholera epidemics, which have the property of either directly causing this irritable state of the sympathetic ganglia, or of so affecting some of the normal constituents of the blood from within, that these produce the conditions we have been considering. This leads me to point out the insufficiency of Dr Johnson's partial [illegible] arterial branches alone. In both of the above conclusions, the [illegible], and if so, there can be no reason whatever why it should alone [illegible] that the sympathetic ganglia are primarily affected, and that there is no morbid matter admitted into the circulation, it is difficult to conceive that such an affection should be limited to the nervous filaments which supply the pulmonary arterial branches.

That the series of phenomena which have formed the sub- [illegible] of paralysis of the sympathetic nerves, as is supposed by some, is evident from the following considerations:—

1. There is no proof that secretion is suppressed from want of nervous force, but much to show that this condition, if existing at all, is due to deficiency of the circulating fluid from which that secretion is derived. Moreover, there is no proof that secretion *is* suppressed. On the contrary, the pathological anatomy of this disease informs us that secretion is not arrested, though impaired, but that the *discharge* of secreted matter is obstructed in the ducts.

2. We have seen above that the peculiar appearances observed on post-mortem examination in the circulatory system must be due to a spasmodic condition of the vascular channel. Paralysis of the sympathetic would, on the contrary, produce a relaxed state of the arterial and venous walls, and we should have, as above indicated, gorged capillaries and *exosmosis* into the cellular tissue of the body, resulting in general [illegible]

3. I admit that the existence of painful cramps, which are generally observed to attack patients suffering from cholera, is no proof of the presence of a similar condition in muscular tissues supplied by the sympathetic; but although these cramps owe their origin undoubtedly to sensory-motor influences, the existence of which we have every reason to connect with the operation of the morbific matter to which all the other changes in the system are attributed, yet it is much more probable that such an excited state of one division of the nervous system should be reciprocated by the other, than that this latter should assume a state of paralysis. Thus muscular spasms, therefore, of which the patient is sensible, constitute a strong *à fortiori* argument in favor of the existence of similar spasmodic actions in structures which, from their physiological characters, they are associated.* The following considerations may tend to strengthen this view:—

a. Vomiting is one of the urgent symptoms of cholera. A necessary condition of the production of vomiting is obstruction of some kind at the pylorus. In this disease, there can be no other cause for such obstruction than spasmodic contraction of the muscular fibres of the lower third of the stomach.

b. The pain and uneasiness felt in the epigastric and precordial regions can only, as far as I know, be satisfactorily accounted for by the spasmodic state of the stomach, diaphragm, and associated muscular structures making itself felt in this way.

c. The intestinal canal is almost entirely dependent for its nervous supply on the sympathetic. If this nervous supply were arrested, as it would be in paralysis, we should have this, and the suppressed discharge of bile, above adverted to, acting as powerful causes to produce a state of *constipation*. Thus then there is nothing to show that the peristaltic action of the intestines is, in any way, impaired; and if it be granted that there is no positive proof to indicate that that action is exalted, of which, I believe, there is much, there is none to establish that it is not as free as at any period during health.

4. Lastly, if cholera were associated with a paralyzed condition of the sympathetic system of nerves, injury or impairment of function of this system, under other conditions, could produce results similar to those observed in cholera, which, it is well known, is very far from being the case.

There are many points in the consideration of this important subject, which, for want of sufficient collection of verified facts, we must necessarily leave to conjecture. We sadly need carefully conducted enquiries regarding post-mortem appearances *immediately* after death, before the reflux of blood into its natural channels has produced that increase of temperature generally noticed shortly after death, and especially with regard to the condition of the blood-vessels and glandular ducts; also results of experimental stimulation in animals, of the whole of the sympathetic system, and also of suppression in its function.

I do not wish to say much regarding treatment, while the theory of the pathology of cholera here advanced is yet so conjectural; it is enough to remark that the indications it suggests are the following:—

1. To promote elimination of the morbific matter from the body.

2. To release the state of spasmodic contraction of the channels of circulation, and of the biliary and renal ducts, so as to allow the blood to resume its normal flow, and to restore the proper secretions of liver, kidneys, stomach, and intestines.

3. To soothe the nervous system after the excitement under which it has laboured, and to ensure healthy reaction.

In the earlier stages of the disorder, before the characteristic flux from the stomach and intestines has set in, remedies may be admitted to the stomach; but it must be borne in mind that there is one class of drugs which is useful in the first stage, positively poisonous in the reactionary stage of cholera; and another which is useful in both. The first class must be exposed to the action of the stomach with great caution, since, if any portion of them lie in the stomach when collapse has once set in, there is much danger of their remaining inert, until the first effort at reaction causes their absorption with detriment to recovery. Of this nature are narcotics and diffusible stimuli. The other class may be administered with freedom, because, after the period of their inactive retention in the stomach during collapse, they are presented for absorption at the very instant when reaction sets in, and thus act beneficially at the precise moment of commencing recovery. Of this nature are calomel and other allied medicines.*

The state of the dermal capillaries permits of applications to the skin, with the hope of their absorption; and with this view, mercurial inunctions, fluid preparations of opium in the earlier stages, with or without chloroform, and perhaps quinine, may be of use. The surface, however, which gives us the greatest promise of speedy absorption of remedies applied to it, is the pulmonary mucous membrane; and I believe that experiments carefully made in this direction would lead to most beneficial results. Of the advantage of chloroform inhalations, we have already had some proof; but much remains to be tried in the exhibition of other remedies in this form, principally, perhaps, mercurial vapor. I have spoken so much in favor of mercurial preparations, because, in my own practice, I have had reason to be well satisfied with their efficacy—an experience which is borne out by that of many of my professional brethren, both in this country and at home. Of these, of course, calomel holds the chief place. It is difficult to conceive a remedy more likely to be of use in this disease than one which is at once, as Dr. Christison states, "an irritant, stimulant, antiphlogistic or sedative, cathartic, diuretic, diaphoretic, cholagogue, sialagogue, and alterative." Latterly, the application of ice to the spine has been much extolled by European practitioners. I have no personal experience of this mode of treatment, although I am disposed to think that, as an adjunct to other remedies, already mentioned, it may be useful. In closing one of his lectures on tetanus, Dr. Watson observes, "Dr. Todd has suggested to me the application of ice to the *spine*—a measure which he has found eminently beneficial in convulsions. This mode of employing cold as a remedy in tetanus seems well worthy of trial. It would have the advantage of not inflicting any shock which might excite or disturb the reflex function of the cord through its incident nerves."

* It is [illegible] the nervous supply complained of in [illegible] now [illegible] the [illegible] supply of blood to the [illegible] which we know certain [illegible] of spasmodic [illegible] these [illegible] information is needed.

* Although the [illegible] is generally [illegible] [illegible] [illegible]

SUB-ASSISTANT SURGEONS.

By Local Rule.

In the [illegible] Gazette of the 9th October [illegible] Notification No. 3115 dated the 30th [illegible] which [illegible] to sub-assistant surgeons who have been [illegible] the lower grade [illegible] the pay of the [illegible] grade.

Now [illegible] the Bengal Government, by which the question was mooted, nor that of India, to which it was referred for final decision, [illegible] sub-assistant surgeon may [illegible] with the mere charge of a charitable dispensary, as it generally happens, or its being in connection with the onerous [illegible] anxiety and [illegible]

To give an instance, I shall here mention the case of a sub-assistant surgeon, now serving in the Punjab, who has, since the issue of Circular No. 710 of the Home Department, of the [illegible] medical officer, been hesitating as to what to do. For, at present, [illegible] pay and allowances as under :—

1.	Pay of second grade sub-assistant surgeon, minus the usual Punjab allowance of Rs. 50 per mensem (which is disallowed to one holding independent charge)	Rs. 150
2.	[illegible] ...	„ 150
3.	„ [illegible] ...	„ 20
4.	„ [illegible] ...	„ 30
	Total ...	Rs. 350

To this sum, if Rs. 50 be added, which is an increase which [illegible] on passing successfully the second septennial examination, for which his time has already arrived, then his pay and allowances will amount to Rs. [illegible] which he will be entitled to by his getting himself transferred to what [illegible] The question more trying to him is, that he should, for at least five years to come, pay a [illegible] of Rs. 50 [illegible] and Rs. 550 after double that period. As for his being able even to reach to Rs. 700, the salary of the highest class of uncovenanted medical officers, though not to enjoy the [illegible] [illegible] [illegible]

CASES FROM PRACTICE.

INTESTINAL HÆMORRHAGE.

By Odoy Chund Dutt,
Civil Medical Officer.

During the last two years I have met with a few cases of intestinal disease which I believe are curious and worthy of record. Two of these were cases of hæmorrhagic flux, and the other two I am about to relate were apparently cases of inflammation of the bowels and peritoneum, of a peculiar form.

CASE I.

Lockhun Roy, a hajut prisoner, aged 35, weak and famine-stricken, was admitted into the Poorce jail on the 12th July, 1866. On the morning of the 17th July, he came to hospital, complaining of severe pain in both knees. His countenance was pinched and anxious, as if suffering from great pain; pulse frequent, small, and weak; bowels costive. At this time the case was considered to be one of rheumatic pains, and an anodyne liniment was ordered to be rubbed on the knees. At about 4 p.m. the native doctor found the patient to be worse, and in a state bordering on collapse. I was sent for and found the pulse almost imperceptible, perspirations pouring out of the body, and the patient restless. Even now he did not complain of abdominal pain, or of any other symptoms, except pain in both knees. I examined the heart, but did not in any way examine the abdominal cavity, so that I am unable to state if pain would have been elicited on pressure or not. I ordered stimulant mixture to be administered every hour, as also hot bottles to the feet and ginger frictions. The patient died early on the morning of the 18th, from symptoms of collapse. On opening the body, the whole of the intestines were found deeply inflamed in their entire coats. The parietal peritoneum was also very deeply injected. The abdominal cavity contained about a pint of greenish-black tainted, with shreds of lymph. Patches of lymph were also found about the ends of the intestines. On opening the intestines they were found distended with a yellowish thin fluid. The mucous membrane was of a dark red color. The lower lobe of the left lung was congested. There was nothing worthy of notice in the other organs.

CASE II.

Boloram Saut Singar, aged 30, was admitted into the Poorce jail on the 12th July, in a weak, famine-stricken state. On the morning of the 19th he came to hospital, complaining of severe pain in the thighs, and a tense, tender state of the abdomen. Bowels confined; no stool. On examination, the abdomen was found very tense and tender; pulse small, weak, and frequent. Tongue was dark-coated; in the same nature as that of Lockhun Roy, above described, and the patient was ordered calomel and opium pills every three hours, and frequent turpentine fomentations over the abdomen. At 3 p.m. he was very restless; the pain in the thighs was very severe; pulse feeble. Was ordered an injection of castor-oil and hot conjee. Died suddenly at 4 p.m. The appearances presented by the intestines and abdominal cavity were much the same as in the case of Lockhun Doss; only the congestion of the intestines and peritoneum was not so deep and bright. The fluid effused in the abdominal cavity was of a deep yellow color, with abundant flakes of yellow lymph floating in it.

Remarks.—I will not venture to offer any suggestion as to the nature of these two cases. In the books in my possession, I could find no account of a similar disease. At the time I attributed the disease to sleeping on damp floor of a newly-made temporary shed, and I directed that the prisoners should all sleep on [illegible] and not on the floor, and after this I met no other cases of the sort.

CASE III.

Dhuran Swarge, aged 20, a hajut prisoner, was admitted into hospital on the 21st August, 1866, with fever of six days' duration. The bowels were constipated. Pulse not very severe nor strong. He was ordered a dose of castor-oil.

22nd.—Had five stools from castor-oil, had fever whole day and night yesterday; it is a little less severe now. He was ordered quinine, grs. v., every three hours, fever mixture to be given in the morning.

23rd.—Had fever during the day, and took fever mixture of [illegible] and [illegible] yesterday. Has not taken to take morning. He was ordered quinine, grs. v., every four hours. At 4 p.m. it was reported that patient was very weak and had had three or four copious watery stools of a red color. On visiting him I found him pale, dejected and dying; one of the stools was passed for my inspection. I found it of a bright red color, very thin, but without any large coagula. Patient died at 5 p.m.

On opening the abdomen, the peritoneum and large intestines generally were found to be congested. About a pint of reddish serum was effused into the abdominal cavity. Cæcum congested throughout, and covered with red patches. On opening the large intestines, they were found filled with a dark yellow fluid. The other organs were normal in appearance.

CASE IV.

Mansa, aged about 30, a hajut prisoner, of robust constitution, complained of fever on the 2nd March, and had a dose of castor-oil. He did not come into hospital, nor did he apply for any medicine on the 3rd. On the morning of the 4th he came into hospital, and said he had a return of fever on the 3rd. He was given a dose of ataxy powder, grs. xx., and afterwards took some rice, at 10 a.m. Soon after he vomited three times, and was purged twice within 2 p.m. The appearance of these two stools was not noticed, but they were stated to be thin and liquid. Between 2 and 4 p.m. he had two copious watery stools of a deep dark red color, with flocculent yellowish deposits, and had vomited thrice, the thrown up matters consisting of bile and mucus. On my visiting him shortly afterwards, I found that his eyes were sunk, pulse very feeble, abdomen sunk and free from pain or tenderness; was very restless. The native doctor had given him a calomel and opium pill at 2 p.m., and another at 4 p.m. I now ordered him an ounce of sugar of lead 5ss. and tinct. opii 5ij in four ounces of water, and gave internally, every half hour, a mixture composed of 10 drops of liquor ammoniæ and 20 drops of sulphuric ether. A large mustard plaster was also applied to the abdomen. Had another stool of the same sort at 7 p.m., and an injection of 10 grains of sugar of lead and half a drachm of tinct. opii was [illegible].

5th March, 7 *a.m.*—Has taken 14 doses of the sedative mixture since 4 p.m. yesterday. Had one scanty stool at night of a dark red color. Is very sick and retching this morning. Pulse weak and quick, but fully restored. Was ordered Collis Browne's chlorodyne (prepared according to the formulæ published by Peter Squire) in doses of 20 minims every two hours.

4 *p.m.*—Had strong fever at 12 a.m. It is getting less now, but not quite gone yet. Says he feels great relief from taking the chlorodyne, and wants to have it oftener than once in two hours. Pulse weak; sickness and retching relieved by chlorodyne. Took a little soft rice and *dahee* for food.

6th, 7 *a.m.*—Took twelve doses of chlorodyne since 4 p.m. yesterday; fever left yesterday evening. Since then feels composed. Had no stool. Was ordered quinine, grs. iii., every two hours along with a dose of chlorodyne.

4 *p.m.*—Had fever at 12 or 1 o'clock, attended with sickness; the fever has just left. Mustard plaster was applied to the abdomen, and the chlorodyne continued every two hours. Had taken three doses of the quinine, and the fever was less strong to-day than on the 6th.

7th.—Is pretty well now, is only very weak. Was ordered quinine, grs. v., at 8 and 10 a.m. respectively, along with a dose of chlorodyne. To have no other medicine.

8th.—Had no fever yesterday, complains only of weakness; was ordered bark and sulphuric acid. Patient was discharged cured on the 11th.

Remarks.—The two cases of hæmorrhagic flux above related are apparently cases of bloody flux, occurring as complications of malarious fevers. Profuse and long-continued perspirations, with a tendency to end fatally from exhaustion, are often met with in [illegible] of apparently slight attacks of [illegible]. A similar condition of the intestinal mucous membrane, [illegible] of [illegible] exhalation from the blood-vessels, may [illegible] accounts for the hæmorrhagic flux that is now and then met with.

The Lymphatics in Frogs. Herr C. Teltt, a military physician, has communicated to the Royal Academy of Vienna some interesting facts in relation to this subject. The death of the animal is the first step for research. The author first describes the [illegible] gland of frogs, and demonstrates its functional relation to the lymphatics of mammalia. Then he describes minutely what must be called the [illegible] gland of the frog, and assigns to it, though a peculiar series of functions.

Notes to Correspondents.

The Indian Medical Gazette.

A MANUAL OF THE DISEASES OF THE EYE.

C. MACNAMARA,

WYMAN & CO.

ON SNAKE POISON AND ITS ANTIDOTES.

THE JAILS AND JAIL SYSTEM OF INDIA.

From the earliest settlement of the British in India, their presence and advance has ever been marked by the setting apart

which had previously been employed as a prison under the then administration, and its situation and former use, no doubt,

tives.

At the end of the last century, prisons in our possession in India were but only on a par with those in England—a type

ment seems to have been slow, and mainly attributable to want

About 1811, the Sudder Nizamut Adawlut appear to have drawn up a code of rules for general guidance on jail manage-

to them an epitome of the whole question.

The note is divided into the following 9 subjects :—

1. Origin and history of Prison Administration.
2. Underlockings and the Cellular system.
3. Inspection and superintendence.
4. Health.
5. Classification.
6. Discipline and general management.
7. Labour.
8. Reformations.
9. Transportation.

The first practical measures of prison reform were initiated by Lord Macaulay, in 1835, shortly after his arrival in India, as a member of the Indian Law Commission.

His minute on the subject states, that as the practice of flogging has been abolished, and the punishment of transportation has proved so expensive, imprisonment must principally be resorted to in India as the punishment of the law; and he therefore called the attention of the Council of India to the establishment of such regulations as should "make imprisonment a terror to wrong-doers, and should, at the same time, prevent it from being attended by any circumstances shocking to humanity."

Sir C. Metcalfe, then acting as Governor-General, appointed a committee to inquire into the whole subject, comprised of men whose opinions would command respect in England, and some of the ablest representatives of the Civil Service. Their report was presented early in 1838, and it has since been the standard authority on the principles of prison management and prison discipline.

The jails in Bengal, 30 years ago, would seem to have held no inferior position to those of more civilized countries. The committee state that, although the humanity of some points in the treatment of prisoners is doubtful, yet, generally, "the care that is taken of the physical condition of these unfortunate men, in the great essentials of cleanliness, attention to the sick, and the provision of food and clothing, appear to be highly honorable to the Government of British India." In fact, what was then the second stage of prison reform in England, would seem to have been the state of prison discipline in India—a state in which the physical condition of the prisoners was looked to, but nothing more; and a prison was made rather a pleasant place of residence. In a moral point of view also, Indian jails held a good place in comparison with other countries. "The mixture of debtors with criminals, which in some places still exists in England, and which appears universal in North America, is unknown in any jail in India. The proportion of distinct civil jails to all other jails is very honorable to the Government. The mixture of the two sexes in Indian prisons is unknown, and, in general, the separation of tried and untried prisoners is at least as complete in India as in other countries."

The gradual steps taken in Indian prison reform will be noted under [illegible].

Previous to the assembly of Lord Macaulay's committee, the management of jail discipline had been under the sudder court, zillah judges, and magistrates; but the individual efforts of the latter could do little towards improvement; their time was taken up by more urgent calls upon it, and it was not until the appointment of an inspector, solely for the purpose, as urged by the committee of 1836, that jail reform really began.

In 1844, under the administration of Mr. Thomason in the North-West Provinces, the first Inspector-General of Prisons, Mr. Woodcock, C.S., was appointed, whose office was "to effect an improvement in the health and discipline of the prisoners, a reduction in the periods of imprisonments, and at the same time a material diminution of expense." A few years later, the Lieutenant-Governor was able to report that these objects had been well gained, a comparison with the statistics of previous years showing that "the prisoners were generally more healthy; that they were better lodged, clothed, and fed; that jail discipline had much improved; and that the expenditure had been reduced."

On such good results following the experiment, the office was made permanent in 1850; similar appointments were made in the Punjab in 1853, in Bengal and in the presidencies of Madras and Bombay in 1854; more recently a special official has also been appointed to the minor administrations.

The next administrative reform that took place was also originated by the Government of the North-West Provinces, in 1860, by the appointment of civil surgeons to the entire management of their jails. The general superintendence had, up to this time, been in the hands of the magistrate of the district; but as their work in their provinces increased, it was found they had not time to attend to the minutiæ of jail economy, and that some other agency was required. Civil surgeons, who had only been concerned in the medical and sanitary state of the prisoners, were now to have "the entire charge; such allowance being made to the medical duty, with a small office establishment, was sanctioned."

This arrangement was confirmed experimentally by the Government of India in 1862, and was finally sanctioned in 1864, "when the local Government was able to show that, in every one of the twenty-five jails to which civil surgeons had been appointed, there had been improved discipline and economy."

Since the latter date, the principle has been adopted over the presidency of Bengal, and in the Governments of Madras and Bombay.

The last measure of administrative reform took place at the instance of Sir John Lawrence, in 1864, who, in a minute dated the 3rd March, says—"The subject of jail discipline and the condition of prisoners in India appears to be a question which calls for earnest consideration," and he appointed a committee to report fully on the present state of jail discipline, and to suggest improvements in the management and treatment of prisoners.

In the Health Section, the "Indian Jail Committee" attributed the high sickness and mortality in jails to the following causes, and in their report they make suggestions for their removal or mitigation:—

Overcrowding, bad ventilation, conservancy, drainage, and water, insufficiency of clothing, sleeping on the ground, deficiency of personal cleanliness, exaction of labor from unfit persons, and insufficient medical inspection; their great points in advance of previous practice being that no central jail (intended for all prisoners sentenced to a term exceeding one year) should be built for more than 1,000 prisoners, and that the minimum space allotted to each prisoner should be 54 superficial and 648 cubic feet. They classify the introduction of such discipline into jails as shall tend to make imprisonment a really deterrent punishment, under five heads, reporting upon each: viz., superintendence, labor, rewards, punishments, education; and they note also upon other subjects, such as juvenile delinquents and reformatories, female prisoners, jail dietary, habitual offenders, tickets of leave, classification of convicts, salaries, fines, statistics, and the accommodation of European prisoners.

2. (*a*) *Jail buildings.*—The provision of prison accommodation was coeval with the first settlement of the English in India. Imprisonment was not a punishment inflicted by native Govern-

accommodation sanctioned.

As in barracks, so in jails, the country is in a progressive state, and while the present generation is acting up to the [illegible] yet look upon us to be quite as inferior in action and practice, [illegible]

The recommendation for "central jails" emanated from the [illegible] Agra, in the North-Western Provinces in 1846, and the Inspector-General of Prisons was appointed to the direct charge [illegible] Allahabad, Benares, Mirzapore, and Bareilly had already been [illegible] Meerut and Jhansi Pundee were at that date nearly finished.

The above two Governments appear to have taken the lead in prison construction, and at this present date the requirements of the North-Western Provinces are approaching completion, while [illegible]

In the Government of Bengal, the Lieutenant-Governor reported in 1864 that "the principal defects pointed out by the Prison Committee of 1836 still exist, though in a diminished degree." A standard design for large jails in this province has, during the current year (1868), been sanctioned by the Govern[illegible]

In this administration there appears to have been delay in [illegible] in the local jail department, and demands on their part for jails [illegible] struction of which would have been for financial and other [illegible]

[illegible] Madras, two central [illegible] [illegible] [illegible]

to life. The second is the system contemplated in the English Prison Act of 1865. The third is the system which has been advocated by some local Governments for introduction into India. The fourth, with certain modifications to be noted hereafter, is the existing system in India. For the purposes of this note, the first and second systems will be termed the solitary; the third, the separate system; and the fourth, the system of common imprisonment. Most of the local Governments in India advocate the introduction of the separate system. The Government of Madras is persuaded that no completesystem of reformation is possible until each prisoner is provided with a separate sleeping cell; but the objection on the score of expense is admitted. The Government of Bombay considers the separate system to be undoubtedly the best, but to be delayed only on the score of expense. The Government of the North-Western Provinces seems satisfied with the existing system, under which, in those provinces, each prisoner has a separate, well elevated sleeping berth, measuring 6½ by 2 by 2 feet, and is associated with other prisoners in labor by day. The Punjab Government strongly urges the immediate introduction of the separate system, and deprecates the objection on the score of expense. The Chief Commissioners of Oude and the Central Provinces, the Resident of the Hyderabad Assigned Districts, and the Commissioner of Mysore, appear to concur with the Government of the North-Western Provinces that separate sleeping berths are all that is required. The Chief Commissioner of British Burmah seems to agree with Dr. Planck, the Inspector-General of that province, that solitary sleeping accommodation would cost a very large sum to provide, and would increase the mortality among the prisoners when provided. But the most strenuous advocate of the separate system is the Inspector-General of Jails in Bengal."

(To be continued.)

SEPTENNIAL EXAMINATIONS OF SUB-ASSISTANT SURGEONS.

In accordance with a recent Government order, issued upon a recommendation by the Inspector-General of Hospitals, L.P., sub-assistant surgeons in this presidency are now to be examined as to the extent of their professional qualifications, on the termination of each of their septennial periods of service, by written questions from the professors of the Medical College. We publish, by the permission of Dr. Green, a set of questions on the several subjects, that sub-assistant surgeons may be made acquainted with the *nature* of the examinations to which they would henceforth be subjected. It will, of course, now be more than ever imperative upon sub-assistant surgeons, not only to keep up the knowledge which they acquired at college, but also to be familiar with the advances which are being made in each branch of the profession. The former will be very easy of accomplishment by an occasional perusal of their text books, and the latter need not be less difficult, if the monthly retrospects, which are (or ought to be) circulated throughout each circle, are carefully studied.

We have reason to hope that the above order will effect a marked improvement in the professional character of the entire body of the sub-assistant surgeons in this presidency, for we are too well aware that very many are apt to occupy themselves with literary pursuits which have no bearing whatever upon medicine, to the detriment of their own reputation and of their patients. As a matter of course, questions emanating from the college professors, who are compelled—as teachers, if for no other reason—to keep themselves informed of the progress made in medical and surgical science, will be "stiffer" than what may be expected from medical officers who are engaged in practice only; and it is therefore fitting that the *crucial* tests at the septennial examinations should be applied by the professors. The examining committees will be convened as usual, and the members are expected to ascertain, by *viva voce* questions, general intelligence and acquirements of the candidates, and to report accordingly. On the score of uniformity, the new system is a decided improvement upon the one lately in force. The examinations will henceforth be *always* of the same searching character, as coming from men who are *accustomed* to teach and to examine. We fully believe that, after a time, after the first feelings of opposition shall have subsided, sub-assistant surgeons will accept the new system as a boon. A higher *professional* status, which they will henceforth acquire, will lead to an earlier recognition, on the part of Government, of professional merit, and so to an earlier bestowal of Government patronage in the shape of higher paid appointments.

We are aware that a feeling of discontent is abroad, and we are grieved to find that it is fostered by the editor of a journal for whom we would fain entertain a high respect. The editor is mistaken, however, in thinking that the sub-assistant surgeon alone is to be subjected to examinations *after* he has once been admitted into the service. The same rule is in force with respect to her Majesty's *assistant-surgeons*, who are examined for promotion to the rank of surgeon (on the completion of 10 years' service) by questions sent from England; and, by the Secretary of State's despatch of November 7th, 1864, No. 340, the medical officers on the Indian establishment are required to go through the same ordeal. We look forward to seeing it extended likewise to apothecaries and native doctors.

Let not sub-assistant surgeons be led into the belief that they are neglected, and that their very name is a disgrace. We have pointed out, in a former article, that they may look in confidence to a still further acknowledgment of good service beyond the concessions which have already been made; and we must remind them that the term *sub* is used in other high departments of the State, as well as their own, and in reference to officers who may hereafter fill some of the *highest* situations of trust under Government. If, however, the title of sub-assistant-surgeon be distasteful, we have no doubt that, upon a respectful memorial being submitted to Government, it would be changed for that of *native surgeon*, the term by which this class of medical officers is indicated in Madras. With *that* title we presume no fault would be found.

QUESTIONS IN SURGERY

1. Describe the pathology of gangrene, and the different forms in which it occurs. Give an account of the causes, symptoms, and treatment of each form of the disease.

2. What is meant by acute angular curvature of the spinal column? Describe its causes, symptoms, pathology, treatment, and results.

3. What are the subsequent dangers from pathological changes to be apprehended in persons who have recently suffered from wounds, or undergone grave surgical operations?

4. Describe, with strict anatomical detail, the operations of [illegible] you would be guided in your selections of either.

5. To what morbid conditions is the external auditory [illegible]? What are the symptoms and treatment of each of them?

QUESTIONS IN MEDICINE.

1. Give a full description of acute [illegible], chiefly with reference to causes, pathology, symptoms, and treatment.

2. In what diseases do you usually have recourse to mercurial [illegible]? In what cases of hepatic disorder was it not [illegible] employed?

3. A patient is brought to you insensible, and you believe [illegible] to be the result of [illegible] intermittent fever. How do you treat this case?

QUESTIONS IN MIDWIFERY.

1. State the circumstances under which rupture of the uterus occurs. Enumerate the symptoms of its having happened, and detail the treatment you would pursue under varying circumstances.

2. What is meant by [illegible] presentation? Describe the [illegible] and state the [illegible] management. What treatment would you advise for this affection?

3. What is the hydrocephaloid disease? Under what circumstances is it seen? How would you [illegible] it? and under what treatment would your patient do well?

QUESTIONS IN MEDICAL JURISPRUDENCE.

1. What are the characteristics which distinguish a case of death by strangulation from one of hanging?

2. What [illegible] appearances are found in cases of drowning?

3. How would you distinguish [illegible] from other stains?

4. [illegible] the blood is found [illegible] what medico-legal [illegible]?

ON THE NASAL ADMINISTRATION OF SULPHATE OF QUININE.

Mr. [illegible] gram of [illegible] with 2 grams of quinine, with from gr. 1/8th to gr. 1/4th of morphia, be [illegible] Dr. [illegible] [illegible] Mr. [illegible]

SUBORDINATE MEDICAL EDUCATION IN INDIA.

We [illegible] education of this class, viz., the possession, on the part of the [illegible] the university examinations for the junior diploma is owing to the fact of the youths possessing so imperfect a knowledge of [illegible] language. This is a serious defect, which we commend to the immediate and earnest consideration of the educational department. [illegible] the medium of communication of professional knowledge to this [illegible] medical literature of which, even in the days of their pupillage, the young men are required to know something; and the translations of which into their own vernacular tongue does not exist, [illegible] students into the colleges and schools of the country. The possession [illegible] in Arts in the Calcutta University, or in any other university [illegible] guarantee of general acquirements, and of English, as qualifying for admission into the Medical College in Calcutta; and nothing else should be accepted wherever this class is educated. This rule may press heavily in some cases, but we must remember who it is that we are about to educate, and what will be expected from him hereafter. In the establishment of the new college, therefore, in the North-Western Provinces, this point must be steadily borne in mind.

With regard to the question of *pay*. When we urged, in our last issue, that the "station medical officers should be appointed to their station duties with strict reference to their [illegible] we did not for a moment intend that they should receive no remuneration for the duty. So far from this, we advocate their [illegible]

[illegible]

Do. Professor of—say Pathology.. .. } 1,800

[illegible] 800

Professor of Medicine and Midwifery, and *ex officio* Physician to the Hospital..	800
Professor of Materia Medica and Botany	800
Professor of Chemistry and Medical Jurisprudence, and Chemical Examiner	800
Resident Surgeon† ... . } Professor of Anatomy and Physiology .. }	800
Resident Physician† .. .. .. } Professor of Comparative Anatomy and Zoology, and Curator of the Museum .. .. }	800
‡Registrar or Statistical Officer	200
Total ..	6,800

We have, probably, in the estimation of those who are accustomed to look upon *teaching* as a *secondary* duty, fixed the salaries of the Principal and Professors too high. But we cannot too emphatically, or too earnestly, impress upon ourselves that our great mission in this country is *the education of the people*. And we must also remember that it is better not to educate at all than to do so imperfectly. "A little learning is a dangerous thing." Second-rate teaching will not answer. But first-rate teachers are not to be enlisted without adequate remuneration; and there is no lack of them. The assistant-surgeons of the Indian Medical Service who come to India now-a-days are, as a body, *professionally*, exceedingly well educated in a general way. Only let it be known at home that well-paid professorships at medical colleges are amongst the prizes of the Indian service, and students will qualify accordingly. Thus a further stimulus will be given to medical education for India. Not that we would urge the bestowal of these appointments upon young men fresh from the schools: on the contrary, they should be offered as prizes to those who have *distinguished themselves* in their medical career; and of such there will doubtless be a multiplied number in after years.

We next come to the duties and pay of the native teachers, who should be sub-assistant surgeons. In the Medical College in Calcutta the students of the native doctor (or, as it is now termed, the *hospital assistant*) class are, we venture to say, insufficiently taught. A few months ago, a well-known Commissioner drew attention to the very inferior professional qualifications of some of these young men whom he had met with in certain dispensaries in Bengal. Shortly after the publication of this report, a correspondent of the *Englishman* (who was apparently familiar with the subject) replied that native doctors were only educated to be *drudges*. This, we fear, is too true. It is understood that the native doctors—hitherto *par excellence* so called—are to serve as *assistants* in regimental hospitals, and that their education need not, therefore, exceed what will qualify them for these subordinate situations. But the regimental native doctor is occasionally the only person in the shape of a doctor with a detachment; and it is clear that unless he is qualified beyond the mere subordinate standard, he may not only be useless, but mischievous. It sometimes occurs that a native doctor of this class is required for the sole medical charge of a dispensary; to assume the functions, in fact, of a sub-assistant surgeon. There are a few men in the service who are qualified for such a charge; but they have qualified *themselves* after leaving college, and their fitness is, therefore, the result of personal effort, not of any educational system. Bearing in mind that these higher qualifications *may* be demanded of this class of native doctors, would it not be well to educate them accordingly?

But, there is educated at the Medical College in Calcutta yet another variety of native doctors composed of two classes;—one, the *apothecary class*, the students in which are intended to occupy subordinate positions in jails; the other, the *Bengalee class*, (both classes are composed of Bengalees,) in which the youths are educated up to a higher standard. *These are to become the college practitioners of Bengal*, though they too are employed, when required and available, as Government assistants, and the system adopted with them might be taken, so far as it goes, as a model for the instruction of *all* native doctors. We would, however, go even further, and raise the standard still higher. We proceed to state what this standard should be. In the first place, native doctors remain too short a time at college; three years are not sufficient, even to master the subjects which, at present, constitute the curriculum of study at the Medical College in Calcutta. This is the period fixed for all the classes. Under the new regulations bearing upon the training of hospital assistants, (of students intended for regimental hospitals—the native doctors of the military class in fact,) the youths are required to serve for two years in a military or civil hospital, after which they will be entered for two more years at the Medical College in Calcutta. Thus four years of professional education are secured. This is the Madras system, and *there* it works well. We have every reason to hope that it will work equally well in this presidency; though we would extend the period of education from four to five years. We would give the same advantage, as to *time*, to both classes of the Bengalee native doctors. The youths of these classes might be attached, for two years, to dispensaries before entering the college. During this period of apprenticeship, so to speak, the character and qualifications of each youth should be carefully studied and kept in view by the European medical officer. Of course, the *selection* of the youths in the first instance must be carefully seen to. An unpromising youth should be unscrupulously rejected, whether at the commencement, or during the progress of his apprenticeship.

We now proceed to the instruction given at the Medical College. It is presumed that the student has been instructed, as far as possible, in practical pharmacy, in materia medica, and in the minor operations of surgery, if not to the same extent as, at least in the same direction, that the country apprentice in England is instructed, by which he would carry with him a fair amount of elementary knowledge to the college, [illegible] considerably curtailed. The instruction given at the college should be very nearly equal to that which the student of the primary, or sub-assistant surgeon, class enjoy. In another article

* [illegible] Analysis.

† We [illegible] of the [illegible] of sick in hospital, neither the house surgeon nor the house physician [illegible] their time.

‡ [illegible] after [illegible] inspection [illegible] treatment [illegible] Ed. I. M. G.

important measure has been pressed upon the Government by

and physicians and surgeons, should, as we have said, be nominally divided into two classes, (although all would be taught together,) the class which is to supply hospital assistants for jails and practitioner.

Each Sub-assistant surgeon attached to the hospital should receive per mensem, besides the pay of his teaching on his own subject, he would give clinical laborious than delivering a clinical lecture in a theatre. There would be three such teachers—the teachers of

Post-mortem Examinations, Chemistry, Materia Medica, and Botany, should receive Rs. 100 each per

The pay of the whole educational staff would, therefore,

Pay of Principal and Professors, the teachers of the Sub-assistant surgeon class	„ 6,800
"Native Doctor" class	„ 850

India, in stations away from the metropolis, where the local

revived after a sleep of six or seven years, will be acted upon. The septennial period, the consummation of which is said to be necessary for the complete fulfilment and carrying out of an idea of a college and hospital is now simply a question of finance. Money alone is required. Will not the local funds suffice? If the Government treasury is too empty, will not the *people* help? Such institutions are required, not in the North-Western Provinces only, but in Burmah, in Oude, in the Central Provinces, and in Rajpootana. Surely, for so popular a cause, the rich men if they are encouraged to do so, surely they will come forward and render their names imperishable, (as the founder of the Medical College in Calcutta has done), by giving medical education, in suitable colleges, to their countrymen. We shall revert to the subject of subordinate medical education hereafter, and take up the question of *text books*.

LOCK HOSPITALS.

In a recent issue we presented, in our leading columns, an excellent article (communicated) on the subject of Lock Hospitals in Calcutta, to the sentiments expressed in which, with a single exception, which it is not necessary now to speak, we gave our unqualified adhesion.

There is one point in connection with this subject to which we would wish to draw the attention of the Government of India. It is now universally admitted, as the result of long and bitter experience, that no department of state machinery, (in this country), which requires careful organization in the first instance, and unremitting supervision afterwards, is likely to be successfully managed without some agency responsible through the chief of the department to the supreme power. Not only should there be a single superintendent of the Lock Hospitals that are to be established in certain quarters of the and executive subordinates under him, but he *without other occupation*. We can do justice to no question in medical science in India which of medical acumen and experience, because (so short-handed is the service) we cannot spare the men, who are already required for the ordinary routine work of the hospitals and dispensaries of the country. Is an enquiry sought for into the of a Medical College to be set on foot? is a superintendent of Lock Hospitals suggested?—and the answer is ever the same. "No man can be set aside for special duties." And then follows the pernicious system of one labourer with the work of three or four. The present paucity of educated medical officers of the establishment is a crying evil which, we have reason to believe, was brought to the notice of Sir John Lawrence. But the evil increases, and is sapping the strength of the service. It is possible that reference may have been made to the Secretary of State by [illegible] would be pointed out the manifestly defective constitution of the Bengal Medical establishment,

and the difficult complications which spring out of it, and the remedy *may* be in the "womb of time;" but, if not, we implore our new Viceroy to look into the question, and at once. Not only is one medical man unable to leave an inferior appointment to take up another which is more lucrative, not only does the victim of circumstances in robust health think of a medical certificate with which to secure leave to England which he *ought* to have on private affairs, and not only is it impossible for the head of the medical department to meet the requirements of local Governments for competent medical officers for even the medical charge of civil stations,—not only do these inconveniences result from the fact of there not being medical men enough in the country,—but, as we said before, medical science is threatened with stagnation. A cholera hospital is suggested for the study and possible eradication of the greatest pest of modern times. There are neither men nor money, is the reply! A fine opportunity occurs for the study of the syphilitic poison. There are to be several hospitals, each to contain some 300 patients, and at which are to be examined some 7000 or 8000 women daily. What a field! Here is an opening for a Ricord or a Henry Lee. Doubtless, in the medical service of this presidency alone, there might be found men, any one of whom would, possessing the required administrative ability, judgment, and tact, and having cultivated the specialty, be an admirable superintendent to *organize* and to *establish* hospitals of this delicate nature in Calcutta. It is not *every* man that would be suitable for the post. We sincerely trust that there will be no "undertaking air." If this measure be decided upon, if the appointment of Superintendent of the Lock Hospitals in Calcutta be conferred upon a medical officer who is already occupied with other duties, and who, probably, has no taste for this, we must not be surprised if the work is done in a perfunctory manner, and therefore *ill done*. It has been whispered to us that the Government fiat *has* gone forth, and that there is *not* to be a special Superintendent. But (we say it with all respect) the laws of the Imperial Government need not of necessity resemble that ancient code which underwent no change. Rather let them resemble the opinions of one of England's greatest orators, which he never hesitated to alter if good reason were shown. May we venture to indulge the hope that *if* the question which forms the subject of our article *has* been disposed of, it may be re-opened and again dealt with, and that, if satisfactory proof be given of the benefit to be derived from the appointment of a special Superintendent of Lock Hospitals, the appointment will be created.

THE GOVERNOR-GENERAL'S SURGEON.

In this country the Ruling Power is at liberty to choose the family physician, and no one can object to the arrangement. At the same time the members of the various departments of the State have an interest in the selection. The health of [illegible] is dear to them; and they are, therefore, anxious that it should be placed in good keeping. Moreover, the medical department of the State, notwithstanding that it may have an independent organization and action of its own, should feel the kindly influence of the State physician for whom its welfare and its progress ought to possess a special interest. The head of our department governs his own service, of course, quite independently of any other power; still, the Viceroy's Body Surgeon is he is called should be [illegible] we hope, may be able to help the Viceroy with [illegible] information respecting it, when required to do so. We [illegible] being, in the remotest degree, the [illegible] questions, he may yet, occasionally, [illegible] his own experience; whilst he should be qualified to discuss all medical questions brought before the Government, whether by the head of the medical department or in any other way. The appointment of "Surgeon to the Governor-General in India" is something more than a mere *private* appointment; and we venture to assert that its delicate functions were [illegible] though unostentatiously, fulfilled by the late incumbent. Who his successor may be, we are not very sure. Names have been mentioned, but only, we presume, to raise a smile. It is whispered that a medical officer is to be summoned from a sister presidency, and not from the Indian service, out of whose body the appointment has *always*, we believe, hitherto been made. A new Viceroy is naturally unacquainted with the usual course of procedure in this matter; but he should be informed by his immediate counsellors of what is the practice: and what a grievous disappointment to the old medical service of India it would be if the Viceroy's surgeon were to be one whose career has been out of Bengal, whose interests are not theirs, and whose functions, therefore, would be imperfectly, and so unsatisfactorily, performed.

Far be it from us to write in a querulous or a dictatorial spirit. But, as representing the current of medical opinion in this presidency, we should fail in our duty if we [illegible] to give expression to those feelings of mingled surprise and regret with which the profession sees one of the greatest prizes of the service—the high appointment of surgeon to the Governor-General of India—conferred upon a stranger.

CUI BONO?

It has been recently stated, in one of the local newspapers, that from the 1st April next the Sanitary Commission [illegible] is to be transferred from the military to the civil authorities, and will, in that case, be under the Home Department, and, therefore, under the administration of the member of Council who presides over that office under the Governor-General.

If the movement involved in this change was merely nominal, no notice need be taken of it; but it is the feeling of a large body of the medical service that it is but another form of separating the sanitary from the medical administration of the country; as such, it is viewed with very great distrust, and believed to be fraught with great danger to the organization of the medical department.

Sanitary work in India has ever been propounded and supervised by medical officers. Dr. Gordon's recent account of sanitary work among British troops, dating back forty years, is very valuable; and, as a recent memorandum states, "should the history of the Royal and Bengal medical departments ever be written, it would be shown that for many years past they have steadily advocated and promoted sanitary improvement in India, and that many individual members of the Royal and [illegible] services have been foremost in the good work."

When the whole medical administration of the British Army was reorganised in 1858, under the presidency of Lord Herbert, [illegible]

General of the department in carrying out its details all over the world.

is it found possible to separate it from the medical art; indeed, it is rather a noticeable fact, that the great authors of rules for prevention of disease are those only who would profit by the ills of mortality.

It is singular that in India only has the plan been tried of separating the administration of the medical from the sanitary [illegible] and very capable it may be said to have been. The history of the first Sanitary Commission for Bengal will probably never be known; its collapse may be simply pointed to. The constitution of the second may be said to have been one of expediency; and so it has worked on. It may avoid difficult complications by tact, but that should not be the position or work of the sanitary adviser to the Imperial Government. If Government have it in contemplation to revise or reconstitute the medical administration of the country, they should bring back medical officers to occupy their proper position as their trusted and responsible advisers on sanitary matters. In India, military and civil sanitation should be as one; they cannot be distinct, as they are in England, where the soldier forms the least important part of the population. Here sanitary work may be said to have begun for the welfare of the soldier alone; increased knowledge of the subject, the progress made in the science as a department of State in other countries, and the real charitable wish to improve the people of the country, have at last caused such knowledge to be extended to the people.

Separation of the sanitary administration from the medical, if temporarily successful even, must fail to the ground eventually. Of no work could it be better said "that separation was [illegible]."

It is believed that no sanitary administration can be complete without bringing in the heads of the British and Bengal medical department into action as a central authority, assisted by a secretary and others.

[illegible] of such a body, charged with the local questions of Government, would be supreme and united, and competent to deal with every question that came before it, and in this council might the solution be found of what would be the best and soundest sanitary administration of the country.

It is well-known how many conflicting interests and schemes [illegible] mooted. This contemplated change is a great one; therefore [illegible] question, before any radical changes are carried into execution.

Considering the various interests and departments to be [illegible] or "commission," or call it what you will? Here might sit the Inspector-General of H.M.'s British Hospitals, the Inspector-General of the Indian Medical Department, with the Statistical Officer, and the Secretary. Such a "body" would be the medi- [illegible]

Local Correspondence.

THE VICEROY'S PRIVATE SURGEON

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

Sir,—In the *Indian News* of January 21st, the following [illegible] appeared:—

"We [illegible] Government House. Lord Mayo was met by the [illegible] Dr. Tonnerre, the Health Officer."

We [illegible] the following morning [illegible]

"We [illegible] Government House. Lord Mayo [illegible] Dr. Tonnerre, the Health Officer."

A [illegible] we find that—

"Surgeon J. Fayrer, M.D., C.S.I., has been appointed to [illegible] Lord Mayo, by the Viceroy, in addition to his other duties."

I am [illegible] Lord Mayo has [illegible] The post of Surgeon to the Viceroy is one of great responsibility and importance. Dr. Fayrer, during the [illegible] has fully established Lord Mayo's confidence by his [illegible] and [illegible] Dr. Fayrer is worthy of [illegible] I [illegible] Lord Mayo [illegible] Dr. Fayrer [illegible] matters of general public interest. In one sense, the appointment is a private [illegible] in another, [illegible] Many of the questions which the [illegible] Viceroy are of a general character. He becomes from his position, [illegible] Viceroy in all matters bearing on the interests of the Indian Medical Service and the health of the native army in this country. Indeed, it [illegible] which [illegible] the [illegible] India. It is surely, then, but right that the Viceroy should [illegible] the Indian Medical Service [illegible] the possibility of Dr Tonnerre, Health Officer and homœopathist, [illegible] Viceroy's ear.

I [illegible] Lord Mayo [illegible] Dr. Fayrer [illegible] Lord Mayo, [illegible] to set aside the [illegible] Government House should [illegible] the possibility of [illegible] Dr Tonnerre, Health Officer and homœopathist, [illegible] Viceroy's ear.

I am

attendant and adviser of Viceroyalty in India shall be taken from their ranks. In the *recent General Orders relating to the Bengal Medical Service*, lately published by Messrs. Wyman & Co., at page 19, we find G.G.O. No. 370 of 14th April, 1867, which, in accordance with instructions received from the Right Hon'ble the Secretary of State for India, "lays down the following revised scale of consolidated salaries for officers of her Majesty's *Indian* Medical Service." Beginning with the Inspector-General, we have the salaries of various officers of the administrative staff laid down; and we find, amongst the salaries for *officers of her Majesty's Indian Service*, that of the appointment of "Surgeon to the Viceroy and Governor-General." From this it is clear that the order in question implies that the Surgeon to the Viceroy shall be chosen from her Majesty's *Indian* Medical Service. It has been so in the past, and it ought still to be so. The appointment of Dr. Fayrer will doubtless be hailed with satisfaction by every member of our service. It would be impossible to find any one more fitted, by the accuracy of his scientific and the respect in which he is universally held, for the post of *honorary* Surgeon to the Viceroy. I say *honorary* Surgeon advisedly, inasmuch as Dr. Fayrer will not reside at Government House, and will officiate as "Surgeon to the Viceroy, *in addition to his other duties*." It appears clear from this that there yet remains to be filled up, in due time, the regular appointment on the staff. Indeed, there are certain grounds for the belief that a gentleman from the ranks of the *Royal* Medical Department is likely ultimately to fill the post of private surgeon. Far be it from me to endeavour to excite any spirit of faction between the sister services, whose interests and aims are of a kindred character. On the contrary, may kindly and noble feelings ever exist between the members of the Royal and of the local medical services! May such feelings never be marred by paltry jealousies! In writing this—which one does most honestly—there is, I believe, no reason why we should not express, without disguise, the opinion that the members of the Indian Medical Department would be strong with disappointment were they to forfeit the high privilege of serving on the Viceroy's staff. It could not but be with regret that we should see the guerdons and distinctions, to which, as a service, we believe we are entitled, passing beyond our reach. The men whose eager services have at all times been available, without stint, for the mitigation of the evils of war in India; they who have devoted themselves to science in this country, and to profound self-denial in the cause of practical philanthropy amongst its people, cannot but know how to value the approbation of the State, and the rewards bestowed for honorable services. It would simply be foolish to affect to despise or depreciate the recognition of public merit by our rulers. Let us therefore hope that Earl Mayo will not forego the present opportunity of doing simple justice, and at the same time paying a well-merited compliment to a department which has ever been animated by feelings of honorable pride regarding the professional status which is its due. As I wrote above, it is not that we grudge the medical officers of the Royal Army any possible good fortune which they can fairly enjoy: very far from it. Yet we are naturally averse to seeing precedents established which must be regarded with extreme disfavor by the officers of the *local* Indian Medical Service, who would thus experience the painful consciousness of being dispossessed of one of their most honorable appointments. It is argued by some that he whom his Excellency the Viceroy may believe to understand his constitution best must of necessity be the most fitting man for the post of private surgeon. The question, however, is clearly one of wider scope. Of two men equally able, why should not the Indian officer be selected, as heretofore? I submit that those who have served with reputation and success in India, and who have faced the disadvantages of continual exile in this country, not unfairly desire and expect to enjoy the distinctions which have heretofore attached to such conditions of service. On this principle it is that I, for one, should be very sorry to see the members of the Bengal Medical Department debarred from furnishing, from their ranks, the private surgeon to the Viceroy of India. There would appear to be really no good reason why they should be subjected to any chance of disappointment in such a matter; and they would certainly be wanting in self-respect and magnanimity were they to withdraw to the fact of State favor passing away from their ranks without good cause. Were any but an Indian officer appointed as the Viceroy's Surgeon, I believe that the nomination would be resented in every Indian civil station and regiment. Without desiring to imply that local medical officers care to hang obsequiously upon the favor of the great, it is yet impossible to ignore the important distinction between sycophancy and proper professional pride. A post of elevation and great trust which it has heretofore been the privilege of an Indian officer to fill, should surely not be allowed to pass to others without very good grounds for such an altered system of patronage. Indeed, I feel convinced that the introduction of such a precedent could only produce widespread heart-burning and discontent. Let us therefore trust that the ambition of our service is in no respect doomed to be baffled or blighted; but that, on the contrary, his Excellency the Viceroy may see fit to afford its members every reason to cherish that spirit of magnanimous rivalry for posts of honor which has in the past been the mainspring of great part of their public usefulness, and the secret of their best service achievements.

I am, sir, yours truly,

SPECTATOR.*

* We have published this letter at the request of our gifted and valued correspondent, though we venture to think that, as the subject has been dealt with in our editorial columns, it is unnecessary. And we beg it to be distinctly understood, that we neither endorse all the sentiments expressed, nor can we approve of the general tone of the letter, which is written somewhat in a spirit of resentment, and of "*service*" laudation. If there is one man more than another, who is anxious to conciliate public opinion, it is our present Viceroy. What he has done has been, we are sure, the result of mal-inadvertence, and no one would more deeply regret a false step than he would. To take up a position of *resentment*, therefore, is to assume an attitude which is hardly suitable to the occasion.—ED., *I. M. G.*

Progress of the Medical and Collateral Sciences.

Animal Life at Great Depths in the Ocean.—On Thursday night, December 17th, 1868, Dr. B. W. Carpenter read to the Royal Society of London his report on the recent dredging exploration undertaken by him and Professor Wyville Thomson at the instance of the Government. The results obtained by the eminent physiologist are very remarkable, and completely upset the dictum of the late Edmond Forbes, that animal life ceases at a depth of eighty fathoms. Dr. Carpenter let down his dredge in water off the Faroe Islands of a depth of about 650 fathoms, and when he hauled it up he found it not only full of living creatures, but that these presented types of many genera and species, and in some respects recalled the littoral fauna of warm climates like the Mediterranean. At another point in their expedition, the dredge was let down in nearly equal deep water, at a point about midway between the Faroe Islands and the north-west of Scotland. Here, when drawn up, the dredge was not found to contain many individual or specific forms, and those which did present themselves were almost all of an arctic type. Now this is not the most remarkable fact. What is more singular, though more in accordance with *à priori* reasoning, is the fact that at the sea-bottom, from which the first animals were taken, the water had a temperature of about 48° Fahr., while the temperature of the water on the second sea-bed was 32° or over the usual freezing point. Then comes the important question, at what point does sea-water find its greatest density, for distilled and fresh-water are most dense at 40° or 39°. Since it is clear that the densest water must be at the bottom, the greatest density of sea-water must be at or about freezing point; and it seems that the researches of physicists bear this view out. Many new species of invertebrates have been discovered by Dr. Carpenter, and among others, certain sheels which were thought to be extinct, and are only known in some of the Sicilian Tertiary deposits.

Acetate of Potash in Gastric Catarrh.—In the *Bulletin Général de Thérapeutique* for November 30th, there is an excellent therapeutical article by M. le Professeur Grisolle, in which the author expresses the belief that the above salt is one of the most valuable of our preparations for the mucous affections of the stomach and digestive canal. He gives cases of acute and chronic dyspepsia, (and in one the catarrh of the stomach was accompanied by acute hepatitis) which were rapidly cured by the employment of the acetate. He mentions, however, that while this salt is not only useful in reducing

[illegible] follows:—An olive-shaped electrode was introduced into the rectum, the other, in the form of a moistened sponge, was applied over the belly, and the application was maintained for ten

doses of from ℈ss to ℈j three times a day. He also applies it externally over the spleen as a liniment.

[illegible]—M. [illegible] gives it in ten or twelve drops in saccharine solution (mj of [illegible]). He considers that it first hardens and then destroys the false [illegible]

[illegible] out of 340 communes in this department, there are barely three where goitre is not endemic. The administration, it seems, is taking measures for the repression of the disease, and these measures are in force especially for the children of the commune. [illegible] number of cures is greatest in those families which offer no resistance to the Government method. This method consists in examining the various drinking waters, and stating which of them are safe for drinking purposes, and in giving the school [illegible]

[illegible] lished by M. Langier. The patient, a young girl, had fallen from some height and had sustained a severe cerebral shock: in fact, suffered for a day or so from concussion of the brain. But when the effects of the cerebral concussion had ceased, she began to show a loss of control over her ordinarily voluntary movements, and this continued for about 15 days. Since, says M. Langier, she exhibited all those symptoms presented by [illegible] cerebellum.

The Constitution of the Sun.—The recent eclipse (August [illegible] the constitution of the solar envelope. M. Jaunsen, while viewing the eclipse in the east, and Mr. Norman Lockyer, while examining the sun in London, have both found that, though the [illegible] they can be distinctly recognised in ordinary sun-light by there suddenly appeared, besides the ordinary dark-line spectrum, a bright line—one similar to that seen when incandescent vapors are examined under ordinary circumstances. He [illegible] seen during eclipse; and, as he found the spectrum could be obtained at any point of the sun's limb, he has come to the conclusion that these solar prominences represent a special envelope surrounding the sun's photosphere, and which, at Dr. [illegible] M. Jaunsen claims priority of discovery; but, as the idea was [illegible] discovery.

The Structure of the Prostate Gland.—The same academy [illegible] chief glandular part of the organ is situate above the spermatic elevation. The ejaculatory ducts traverse the prostate, and are surrounded by a series of glandular bodies, which number from 60 to 100. The structure of these glands differs, he says, entirely from that of the ordinary type of gland. A transverse section of them shows within them a series of papillæ covered with cylindrical epithelium cells; and, what is more remarkable, [illegible] *December 9th*, 1868.

[illegible] January, 1869, there is an abstract of an article recently written by Von Græfe on this subject, in which the distinguished German describes his mode of operation for the corneal affection. A little flap, about three-quarters of, or one line thick, is made with a very narrow knife from the apex of the corneal protru- [illegible] Next day the new surface is touched with a mixture of one part [illegible] tration becomes apparent. The surgeon must then drop in atropine and wait. In from six to eight weeks, there is an exfoliation of the cornea, which makes the vision far more dis- [illegible]

Methyl-Stibine and Allied Compounds.—[illegible] their researches on the physiological action of these singular compounds. They, however, consider that in some respects the field of investigation is theirs, and they propose soon to bring before the Academy an account of experiments undertaken to demonstrate the physiological action of kindred compounds called chlorides of stannethyl, in which the chlorium of chloride often is partly or wholly replaced by the radical ethyl.

[illegible] Amputation.—[illegible] statements of M. Bonjean, the mortality after amputation is [illegible] immediately after the operation, and for some days subsequently, [illegible] given in the day varies from a gramme to two or three grammes [illegible] Hospital Saint Andri, at Bordeaux, with the results above given.

The Effects of Resection of the Nerves.—MM. Andruin and Petet have published the results of numerous experiments on the physiological results of resection of the nerves. They give numerous cases where nerves were divided completely, and when, nevertheless, the parts of the integument supplied by those nerves very rapidly regained their sensibility.

A New [illegible].—A [illegible] M. de la Tavignean, states that he has cured a certain number of [illegible] preparation.

Transfusion.—Herr Mittler has recorded, in the proceedings of the Vienna Academy of Sciences, numerous experiments [illegible] had the

THE HISTORY OF CHOLERA.

(Continued from page 30.)

ALTHOUGH it is impossible to fix the date and circumstances of the advent of cholera into England in 1853-54, we may with advantage consider its progress in certain localities, as for instance in Newcastle, which suffered most severely during this epidemic.

The Tyne, as is well known, is a tidal river, and during its flow it carried the sewage of Newcastle as far as Elswick, where, in 1853, the open culvert of the water company supplying the town was situated. A large drainage area at Whittle Dean had usually yielded water for the purposes of the company; but early in 1854 the supply from this locality having been partially cut off, the company took upon themselves to pump water directly from the Tyne at Elswick, into the town; the inhabitants of Newcastle were constantly, therefore, imbibing water contaminated with the filth of their own dirty city. We may conceive the nature of this drinking water when it is stated that no less than two-thirds of the population of Newcastle were without privies, and the filth accumulating in the streets was washed down into the river by the rain, and as already explained, carried up in a diluted form to Elswick, to be redistributed to the inhabitants of the town for domestic purposes. Supposing cholera to have existed in Newcastle, it is evident the dejecta of those affected, would very probably under these circumstances, have found its way into the intestinal canal of the unfortunate townspeople; the more so, as directly cases of the disease occurred, the authorities betook themselves vigorously to washing and flushing out all the drains and dirty holes in the place, thereby increasing the chances of cholera fomes finding their way into the river, to be consumed by the population. It is quite certain the drinking water contained organic matter, for Dr. Thomson found it in abundance by analyses, and considered it probable a portion of it consisted of human excrements. And Mr. Furness, during the height of the epidemic, exhibited a bottle of drinking water to the guardians of the city of "a most noxious quality." I may observe, however, in passing, that although this impure water was consumed from May till the end of August, 1854, it did not generate cholera among the inhabitants of the place up to that time.

On the 29th of August, a woman living at Bill Quay, where cholera was known to exist, was attacked with diarrhœa. She proceeded to Newcastle by steamer, and the case was declared to be one of cholera on the 31st of August. On the 1st of September, 3 deaths from cholera were reported in the town; and by the 9th, Mr. Granger states, the disease "was epidemic" in the city. On the 12th there were 59 deaths, and on the 15th no less than 140 individuals fell victims to the disease. In the meantime, the scandalous proceedings of the water company had been discovered, and on the 15th of the month the supply of water to the town from the Tyne was stopped. From that date, the cholera began to diminish.* On the 25th the deaths had fallen to 75 per diem, and on the 30th to 16, after which not more than four deaths occurred on any one day.

A still more remarkable instance of the kind is Dr. Snow's well-known Broad-street case, which was one among many of a succession of partial local outbreaks of the disease, which have always been one of its marked features, attributable, by the majority of authorities at the time, to "the localizing cause" plus an "epidemic or pestilential constitution of the season."†

It appears that among the sub-districts of St. Ann's, Golden Square, the mortality from cholera in 1854 was no less than 128 for every 10,000 persons, while the general cholera-rate of the metropolis was only 60 to the same number.

The district was not situated on a low level, nor were its inhabitants very poor; it had enjoyed a peculiar exemption from disease up to the time of the outbreak of cholera.*

A child who had been ill with cholera, or choleraic diarrhœa for three or four days, died at No. 40, Broad-street, on the 2nd September, 1854, and it was ascertained that the child's fæces had been emptied into a cesspool situated only three feet from the well of the public pump in Broad-street, from which most of the surrounding people took their supply of water. It was further discovered that the bricks of the cesspool were loose, and allowed its contents to drain into the pump well.† On the night of the 31st of August, cholera broke out among the inhabitants of Broad-street, the greater number of cases occurring on the 1st of September. On the following day the attacks fell from 143 to 116, and the day after to 44; by the 12th of the month it had almost subsided. Dr. Snow and the Reverend J. Whitehead investigated the circumstances of this case with the greatest care; nor have the facts they brought forward ever been disproved. These gentlemen affirm:—"It was found that nearly all the persons who had the malady during the first few days of the outbreak drank of the water from the Broad-street pump, and that very few who drank of this water during these days escaped having cholera." In the weekly returns of deaths for September 9th, the following was recorded as occurring in the Hampstead district:—"At West End, on 2nd September, the widow of a percussion-cap maker, aged 59 years; diarrhœa two hours, cholera epidemic sixteen hours." Dr. Snow was informed by this lady's son that she had formerly resided in Broad-street, but had not been in the neighbourhood for many months. A cart went from Broad-street to West End every day, taking out, among other things, a large bottle of water filled from the pump in Broad-street, the lady in question preferring this to any other water. The bottle of water was carried out to Hampstead as usual on Thursday the 31st of August, and she drank some of it that evening, and more on the following day. She was seized with cholera on the evening of the latter day, and died on Saturday. A niece, who was on a visit to this lady, also drank the water; she returned to her residence, in a high and healthy part of Islington, was attacked with cholera and died. There was no cholera at the time either at West End or in the neighbourhood. Besides these two persons, only one servant partook of the water at Hampstead, West End, and she did not suffer, or only to a slight extent.‡ On examining the Broad-street pump water, Dr. Snow found it to contain organic matter in the form of "small white flocculent particles," which, Dr. Hassal thought, "resulted from the decomposition of other matters."

With regard to this remarkable case, the committee appointed by the Board of Health to conduct a scientific enquiry into the circumstances of the epidemic of 1854, remark:—"It seems probable that the water of this well did really act as a vehicle of choleraic infection"; but (assuming the absence of fallacy in the case) this probability might easily be admitted, without its therefrom resulting that infection depended on the specific material alleged by (Dr. Snow). The water was undeniably impure, with organic contamination; and we have already argued that if, at the time of epidemic invasion, there be operating in the air some influence which converts putrefiable impurities into a specific poison, the water of the locality, in proportion as it contains such impurities, would probably be liable to similar poisonous conversion.§ The committee argue:—"If, therefore, the specific

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* Report on the Cholera Epidemic of 1866 in England, by the Registrar-General, p. xxvii.

† Dr. E. H. Greenhow on Cholera, Medical Chirurgical Review, 1857, p. 65.

* Report of Committee for Scientific Inquiries into the Cholera [illegible] 1854, p. 89.

† Lancet, Vol. II, 1855, p. 156.

‡ Medical Communication of Cholera, by Dr. J. Snow, Second Edition, London, 1855, pp. 44-45.

§ Report of Committee for Scientific Inquiries into the Cholera Epidemic of 1854, p. 92.

drinking water, organic matter and living particles, but only of

of the mortality in the epidemic of 1849 compared with that of 1854, it appears that the population to which the Lambeth

water purveyed by the Southwark and Vauxhall Company, and that the tenantry using the purer water supplied by the Lambeth Company in 1853-54 suffered not a third as much as the same tenantry had done in 1848-49, when the water was impure. On the other hand, the Southwark and Vauxhall Company, which pumped an impure water in 1848-49, pumped even worse water in 1853-54, and the mortality in the houses supplied was ten per cent. higher.† It was from a consideration of facts such as these that led to Parliament passing "The Metropolitan

from the 31st of August, 1855. Previous to this time the several water companies took water for domestic use from tidal and impure portions of the Thames, simply straining it through wire screens on its way to open settling tanks, from which it

draw water from the Thames below Teddington Lock; all reservoirs in which water was stored were to be roofed in; and on its way from any such reservoir to the mains, or pipes for delivery, the water was to be filtered. The only exception to this rule was in the case of water which was pumped from wells into a covered reservoir or aqueduct, without exposure to the

The practical effect of this Act was to induce sand-filtration, and the supply of water from covered pure water tanks to the entire metropolis.

The Committee of Scientific Enquiry extended their investigations

1855-54, and their efforts in this direction were most ably

the purity of the air; and that these characters, apparently so with greatly increased development in those low levels of

ature, and hazy air with absence of wind, of ozone, and of

out those alluvial districts. And when these statements are

of the year (or some unknown influence essentially joined with them) there has been an important factor for the problem of that epidemic mortality."

In reviewing the whole of the materials at their command, question of the etiology of the disease, that "the doctrine of epidemic cholera, which has gained almost universal acceptance, does not affect to explain what may be the power, the exciting

has foraged from place to place about the globe, sometimes move in more defined procession, and which now for the third time has shed its fatal influence over the land."

But with this mystery still unsolved, there has grown more and more into shape a doctrine, which is both intelligible and practical, that the undiscovered power in its wanderings acts after the manner of ferments, that it therefore takes effect only

it brews poison must be air or water abounding with organic impurities. Taking this as hypothesis, and testing it by the facts before us, we find that it would explain them all.

"Either in air or water, it seems probable that the infection can grow; but on the whole evidence it seems impossible to doubt that the influence which determines in mass the geographical distribution of cholera in London belongs less to water than to the air."† The mortality had more nearly followed the degree of elevation of soil than been proportionate to any other general influence; "and on the supposition (which this result greatly confirms) that the choleraic infection multiplied rather in air than in water, meteorology explains how the balance of healthfulness is weighed in favour of the higher levels, by their less participation in the high night temperature of the metropolis by their comparative clearness from mist, and, above all, by the curative resources of more free ventilation."‡

We can hardly fail to trace in this resumé of the etiology of cholera, written in the inimitable style of Mr. Simon, a reiteration of the opinions of Drs. Baly and Farr as expressed in the College of Physicians and Registrar-General's reports on

the zymotic theory and that put forward by the College of Physicians are interwoven, the combination being such as only a master hand could produce; and yet the work was unsatisfactory, especially to the school led by Dr. Snow and Budd, and which at this time was extending its influence, and attracting the attention of many hard working and thoughtful men, both in England and on the continent.

Professor Pettenkofer, of Munich, in 1855, attributed the propagation of cholera to the rice-water stools of patients in a state of fermentation.‖ Dr. Pettenkofer believed in the necessity for the introduction of a ferment from without

* Report of the Committee, p. 1.

† Report on the Cholera Epidemic of 1854, p. 9.

‡ Ibid.

‖ This theory was put forward by Dr. Snow, W. Farr, W. Baly, Messrs. R. Cooke and J. Glaisher.

Dr. Pettenkofer's views were first published in Griesselich's Archiv für die Heilkunde, 1855, and subsequently in Ungern Archiv für die Medicin, 1865, and Zeitschrift für Biologie, 1865. Von Dr. Max Pettenkofer's Monographien.

ferment can only act where it meets with suitable local conditions. According to this authority, a special leaven sets up a zymosis or decomposition in the impure soil itself, and the poison of cholera is generated from this earthy fermentation. While, therefore, he considered the presence of a special ferment as essential to the production of a cholera epidemic, he also insisted upon the existence of certain local peculiarities. These he supposed to consist of a damp subsoil, sufficiently porous to be penetrable by the decomposition products of human and animal excrements. He was of opinion that it was only in such a soil, thoroughly impregnated with this peculiar organic matter, that the special cholera poison is generated.

Hence, as Dr. Griesinger observes, Professor Pettenkofer asserts the susceptibility or insusceptibility of towns, for a cholera epidemic is in exact proportion to their soil relations. The difference between the mortality from cholera in the upper and lower terraces of London he attributed to the dry gravelly soil of the former, which allowed all the impure matters for decomposition to gravitate towards the moist, closer soil of the lower levels, where it underwent a much slower decomposition. Single cases may occur, Dr. Pettenkofer says, in towns or houses whose foundations are built on a rock, but never epidemics; and any exceptions to this rule will, upon closer examination, be found more apparent than real. Arguing upon this presumed fact, he abandoned all ideas of air and water as the nidus of cholera, and sought for it in the soil alone.*

The ferment supposed by Dr. Pettenkofer to be necessary to set up the peculiar decomposition of which cholera poison forms one of the products, is the matter of the dejections of cholera patients. His notion was that the cholera germ-bearing excrement which spreads itself in the damp porous soil already impregnated with fœcal matters, produced by means of the fine division which it there underwent, such a modification in the process of putrefaction and decomposition, that, in addition to the gases usually formed, a cholera miasma was produced, which became diffused through the atmosphere of dwellings in common with other exhalations. Thus, although the cholera miasma was formed in the ground, the air was the vehicle for its transmission to the patient. He considered the dejecta of persons suffering from diarrhœa or cholerine equally capable of producing the pestilence as the cholera dejections.

In confirmation of his theory, Dr. Pettenkofer gives the following history of the introduction of cholera into the convent prison of Ebrach, where both the male and female prisoners were attacked, whilst the officials, a company of soldiers quartered there as a guard, and the inhabitants of the adjoining village, entirely escaped. In the first place, however, we may notice that the "necessary" accomodation of the prison consisted chiefly of wooden night stools.† Such privies as existed for the use of the prisoners emptied themselves into a stream, which, entering at the women's division, ran through the institution, and passed out at the men's side. The privies in the female division were thoroughly bad, the brickwork through all the floors being impregnated with excrement; "the stink was a pestilential one," and the excrements were conveyed from the privies to the ditch by means of wooden spouts. Into this very objectionable jail a prisoner was brought on the 20th of August, suffering from diarrhœa, which soon became developed into cholera. On the 27th, the man who attended him took ill of cholera and died; an epidemic spread through the jail, affecting the male and female division equally, although there had been no intercommunication between them, except through the officials of the place, all of whom remained free of the disease. But among the females it was discovered the first case occurred in a woman who had washed the linen of the patient admitted into the prison with cholera.

There were 600 prisoners, arranged in classes, between which there was little communication, yet the disease showed itself speedily throughout all parts of the prison, reached its climax in the men's ward on the 11th of September, and then declined, having carried off about ten per cent. Dr. Pettenkofer attributed the outbreak to the fermentation set up in the excreta brought into the jail by the first case, and which were thrown into a large cesspool in the garden, and the badly arranged "necessaries" of the women's department, into which all their dejections were emptied.

The same author also mentions the fact of cholera having been introduced into the prison of Kaishein in 1854 by two prisoners. Nothing could have been worse, he says, than the hygienic state of this jail, but the stools of the cholera cases, and all others, were subjected to disinfection, and not a case of cholera occurred among the other prisoners.

The same phenomena were observed at Traunstein, in Bavaria, when sulphate of iron was employed as the disinfecting agent, and the disease in every instance contented itself, contrary to its usual habit, with the first victim.‡ In England Dr. Paddock used similar means, and with admirable effect to stop an outbreak of cholera at Horfield Barracks, near Bristol. He recommended that the dejecta of all the patients should be received into vessels containing a strong solution of chloride of lime, that the soiled linen should be burnt, latrines disinfected, the troops to be kept under constant observation, so as to catch the disease in its first stage, and lastly that the men should be prevented from wandering from their baracks into infected localities.

The above are a few among many cases of the kind recorded during the epidemic of 1853-54, not only as evidence of the value of disinfectants in cholera epidemics, but as proving the direct influence exercised by cholera dejecta in causing the spread of the disease.

Another class of cases occupied the attention of several observers during the epidemic of 1854, from which it was intended to demonstrate not only that the fœces of cholera patients generated cholera in otherwise healthy people, but that articles of clothing soiled with these dejecta might induce a similar result. I have already referred to a case in point related by Sir J. Simpson, which occurred at Moor Monkton, in 1832. In 1854, cholera was not known in the county of Bedford, when it broke out in the village of Ridgmount, and eleven cases occurred, all of which were fatal. It was ascertained that the first case occurred in a man whose son had died of cholera in London a week or two before, and whose clothes were sent down to the country. The poor man unrapped the bundle of clothes himself, was seized with the disease and died; his case was the nucleus of the others.† An instance of a similar nature was reported from Lustheim, near Munich, where the first case of cholera was generated in the house of a labourer, one of whose daughters was in service in Munich. The latter sent her parents' clothes belonging to a family, some members of which had just died of cholera. These old clothes were at once appropriated and worn. Three days afterwards (September 21st, 1854), the father and mother were seized with cholera and died; on the 22nd and 25th other members of the family took the disease.

Sjur Nielsen, when out fishing, was moored to a small island, on which several bodies of persons who had died of cholera lay unburied. A few days afterwards, four cases occurred among men in his boat. Before Neilsen returned home, fearing infection, he changed his clothes; he remained with his family [illegible] only, on the following morning he left for Bergen.

* Dr. Griesinger on Cholera. Medico-Chirurgical Review, 1857. pp. 101, 110, 97, 98.

† Idem, p. 77.

‡ [illegible] to Cholera Conference Calcutta, 1866, p. 41.

[illegible] and Mauritius." By Dr. J. Barnes, U.S., London, [illegible] p. 159.

"The wearing apparel, the bed-clothes, and the mattrass of a cholera patient were washed at one of the fountains of the [illegible] fountain being broken, this foul water became mixed with the [illegible]

[illegible] of Europe, a considerable portion of America, and the West Indies. In St. Petersburgh and certain other parts of Russia [illegible] notice, equally applicable to Persia. Our troops, and those of Russia, in the Crimea, were again attacked by cholera in April, [illegible] and [illegible] Asia Minor, [illegible]

[illegible] Cape de Verde group, at the beginning of July; it was supposed to have been imported by a Sardinian emigrant vessel from [illegible] in a sickly state, and that there had been some deaths during the voyage; but no reliable information as to the true nature of the [illegible]

In 1856, many parts of Europe again suffered severely from [illegible] posed in consequence of an outbreak of the disease in that city. The basin of the Mediterranean, Spain, and Portugal, were more or less generally affected by cholera; Brazil, British Guiana, and many localities on the Spanish Main and the Gulf of Mexico were also under its influence.

[illegible] with advantage, pass on to the consideration of the epidemic in the Mauritius of 1856, of which we have fortunately full [illegible]

crew of the other vessel. On arriving near the Mauritius they [illegible]

[illegible] 16th of January; the coolies were then landed on Gabriel Island, the quarantine station of the Mauritius. On the 17th, Dr. Finlay went from Port Louis to take charge of the coolies; and on arrival he reported that, after they landed, two deaths from cholera had taken place among them. Within the following month no less than eighty-three of the coolies died from cholera.

[illegible] communication was at all times easy by boat, and on foot at low tide. It was clearly shown that intercourse had taken place between the two islands after the landing of the coolies. On [illegible] Flat island was seized with cholera and died.

[illegible] beach and remove the casks of water and provisions sent to them from Port Louis, nor were effective means taken to prevent [illegible] island.

[illegible] carry stores from the boat up the beach of Gabriel Island, and who was thus employed on the 20th, 23rd, and 26th of February, was taken ill on the latter date, and, as the steamer *Victoria* was returning to Port Louis, Alfred was put on board. On his passage, symptoms of cholera declared themselves, and he died on the steamer the same night (26th February) of cholera. This was the first case of cholera in Port Louis. The crew of the [illegible] Port Louis, only to cease after sacrificing in the Mauritius thousands of victims." "A portion of Savanne was attacked [illegible] been introduced into the district by a prisoner arriving from [illegible] It was the same in all other districts of the island, where the disease always first appeared in persons who had come from Port Louis." The Commissioners appointed by the Governor of the island, to enquire into the origin of this terrible outbreak, [illegible] to the cause of the disease; in fact, it was not their province to [illegible] appearance of cholera in the Mauritius, in the month of March, [illegible]

During [illegible] cholera [illegible] great part of Europe and America.

In 1859, it again appeared in a sudden and mysterious manner in several places. It was generated at Hamburgh, in June, attacking "young and old, rich and poor, in all parts of the town, showing no preference to the waterside over any other locality." In July, several towns on the Gulf of Finland were under the influence of cholera, and it was said to have been [illegible] during the month of August. At the same time the disease broke out at Mercia, on the Mediterranean coast of Spain. The French troops in Algiers, and the Spanish army in Morocco, [illegible]

[illegible] in July 1859, but did not spread in either of these towns.

[illegible] September. Two cases of [illegible] on the next day, but they were [illegible] from the [illegible] passengers, and the disease did [illegible]

(*To be continued.*)

ORIGINAL COMMUNICATIONS.

INDIAN EXPERIENCES OF LITHOTRITY.

By J. B. Scriven,

Principal, Lahore Medical School.

Having published in the numbers of the *Indian Medical Gazette* for August and October, 1868, a brief account of thirty-three cases of lithotrity at the medical school hospital at Lahore, I now add a tabular statement of seven more, making the number forty since 1861, of which 18 have been during the last two years, 1867 and 1868. All of these seven were successful cases, that of an old man, who could not have lived under any circumstances. He got diarrhœa soon after the operation, and generally sank, without any new symptoms referable to the bladder.

After death, his kidneys were found enlarged and fatty, their pelves dilated, inflamed, and containing pus. In the bladder there were five stones, varying from 1 inch to 1½ inch in their long diameter; one of these had been broken into large fragments by the lithotrite. The bladder was much thickened, and its mucous membrane injected; the middle lobe of the prostate was greatly enlarged, and projected upwards into the bladder. The mucous membrane of the urethra was ulcerated, and even in a sloughy condition in some places; and, about its middle, was a faceted calculus, half an inch in diameter. The bladder contained about six ounces of urine. The other six cases were ordinary ones, and the stones of moderate size.

One principal object in the present communication is to supply a deficiency in the former papers, in which, it will be remembered, I had no very useful information to supply from my own practice as to the time the lithotrite ought to remain in the bladder.

In the seven cases now under consideration, the time has been carefully noted in several instances, so that some deductions can be drawn. These are certainly not too favourable; for, in some of the patients, especially Kahun Sing, there was unusual difficulty in catching the stone, which was generally found sunk down into a hollow behind the prostate gland. The tabular form given below, is the same as in the last paper, except that the column of remarks has been cut up into three, referring to the time the instrument was in the bladder. I may mention here that the shortest time in these cases was 45 seconds, and the longest 4 minutes and 37 seconds, a very unusual period. It appears from the table that in the case of Peer Buksh five pieces were crushed in 1 minute and 15 seconds, which gives 15 seconds to each piece.

Furthermore, the period that these cases were under treatment was less than is usual in lithotomy, with the exception of the last case, Khoda Buksh. Taking the six cases that recovered, the shortest period was eight days, and the longest thirty-seven, the average being twenty days, which, I believe, is less than the average of any successive six cases of lithotomy that could be collected from the records of any hospital in India, counting from the day of operation till the wound in the perinæum was completely healed. Thus, one great objection raised to the practice of lithotrity in this country, *viz.*, the protraction of the treatment, did not exist in these cases, and, with good instruments and proper selection of cases, seems to me likely to disappear in the vast majority of instances.

The fifth case, Jaga, was once in hospital before; but there is no doubt that on this second occasion he was suffering from a fresh stone, and not from any remnant of the former one, for he persistently declared that he had remained perfectly well, and been able to run, jump, and perform any active exercise after his discharge on March 4th, till a fortnight or three weeks previous to his second admission on October 19th.

I have heard the objection raised to lithotrity, that there could be no certainty of the last fragments having been removed. That this is more difficult to ascertain than in lithotomy, must be admitted; but, surely, the total absence of symptoms for seven months is sufficient evidence of cure. Neither operation, of course, can alter the diathesis, and it must be well known to all surgeons of large experience in lithotomy that it is no unusual thing for a second stone to form after the first has been removed by a *cutting* operation.

Number.	1	2	3	4	5	6	7
Name.	Kumma, Hospital Reports, v. 1, p. 171	Mahomed Deen, Ann. p. 61	Peer Buksh, vi., p. 178	Kahun Sing, xiii., p. 130	Jaga, vii., p. 180	Hasu, xiii., p. 132	Khoda Buksh, xiv., p.
Sex.	Male.	Do.	Do.	Do.	Do.	Do.	Do.
Age.	?	43	28	45	31	60	40
Size of Stone.	4 inch.	?	?	?	...	?	?
Date of first operation.	June 27, 1868	July 7, ?	Ditto 15, ?	Oct. 14, ?	Ditto 21, ?	Ditto 31, ?	Nov. 25, ?
Number of operations.	3	5	2	6	3	1	3
Duration of treatment.	15 days	31 ?	8 ?	26 ?	13 ?	7 ?	37 ?
Condition of Stone.	U.	U.	...	P.	P.	P.	U.
Result.	Cured	Do.	Do.	Do.	Do.	Died	Cured
Quantity of detritus ejected.	12 grains.	?	133 ?	26 ?	[illegible] ?	29 ?	?
Average number of pieces crushed on the occasions in which the time was noted	1	4	5	4	3	3	5
Average time the instrument was in the bladder in the same operations.	2 M. 2	50 1	15 1	48 2	48 1	10 1	27 2
Number of operations in which the time the instrument was in the bladder was noted	2	1	1	4	3	1	3

Lahore, February 18th, 1869.

SUMMARY OF FIFTY POST MORTEM EXAMINATIONS OF INHABITANTS

By Kenneth McLeod, A.M., M.D., L.R.C.S.E.,

TABLE

No.	I.	II.	III. Cranial Cavity			IV. Thoracic Cavity					
			Skull.	Membranes.	Brain &c.	Larynx & Trachea.	Pleurae.	Lungs.	L. & B. Vessels.	Pericardium.	Heart &c.
11		Nothing noted.	Healthy.		Healthy.	Healthy.	both lungs.				healthy.
12		Nothing noted.	Healthy.		Healthy.	Healthy.	left side.		Upper lobe		
13		Nothing noted.	Healthy.		Healthy.	Healthy.		lobe more advanced.		Contained a ity of serum.	healthy.
14		Nothing noted.	Healthy.	gested, with	Healthy.	Healthy.	cavities con-				
15		eye, ulcer	Healthy.		Healthy.	Healthy.			and oedematous.	Contained	
16	Greatly	Nothing noted.	Healthy.		Healthy.	Healthy.	pleura.			Contained about 4oz. of serum.	healthy.
17	Much oma-	Cicatrix			Healthy.	Healthy.		Congested and		Contained a	Contained white &c., healthy.
18	Highly		Healthy.	Healthy.	Healthy.	Healthy.			mon in out.	small amount of serum.	
19		Nothing noted.	Healthy.		Healthy.	Healthy.			and em- riorly. cline in-	Contained a	oma of aorta fatty.
			Healthy.		ted.	Healthy.			Congested.		healthy.

OF THE JESSORE DISTRICT, PERFORMED IN THE JAIL HOSPITAL.

Civil Assistant-Surgeon, Jessore.

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No. III.

V.

Abdominal Cavity.

Parietes and Peritoneum.	Stomach.	Small Intestine.	Large Intestine.	Liver.	Spleen.	Right Kidney.	Left Kidney.	Pancreas, &c.
Healthy.	Healthy.	Healthy.	Congested and pigmented in patches.	Fatty and slightly congested.	Enlarged; congested.	Cortical substance slightly degenerated.	Cortical substance slightly degenerated.	Healthy.
Healthy.	Healthy.	Occasionally congested.	Contracted, thickened, and pigmented.	Fatty and cirrhotic.	Capsule thickened; organ enlarged.	Cortical substance degenerated.	Cortical substance degenerated.	Healthy.
Old bands of organized lymph.	Healthy.	Healthy.	Contracted; ulcers in process of healing; pigment deposit.	Capsule slightly opacified and contracted, slightly fatty.	Enlarged; capsule opaque.	Cortical substance degenerated; congested.	Cortical substance degenerated; congested.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Healthy.	Enlarged.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Fatty and slightly cirrhotic.	Adhesions around; capsule opacified and cartilaginous.	Cortical substance degenerated; wasted, right contained cysts.	Cortical substance degenerated and wasted right contained cysts.	Healthy.
Healthy.	Healthy.	Occasionally congested.	Large transverse ulcers in sigmoid pleura, and rectum.	Fatty, with biliary congestion.	Enlarged and engorged.	Enlarged and congested.	Slight small abscess in cortical substance.	Healthy.
Healthy.	Healthy.	Mucous membrane densely pigmented.	Healthy.	Fatty.	Enlarged and engorged.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Congested in patches.	Congested.	Cirrhotic and fatty.	Enlarged; capsule opaque; firm.	Cortical substance slightly atrophied and degenerated.	Cortical substance slightly atrophied & degenerated.	Healthy.
Healthy.	Healthy.	Curdy congestion; peyer's patches wasted.	Congested.	Cirrhotic and slightly fatty; minute lobular congestion.	Small and congested.	Highly cystic, cortical substance degenerated and wasted.	Highly cystic, cortical substance degenerated and wasted.	Healthy.
Healthy.	Healthy.	Mucous membrane highly congested.	Healthy.	Healthy.	Congested.	Pyramids congested.	Pyramids congested.	Healthy.

ON CHOLERA.

By C. MACNAMARA, M.D.,

[illegible]

In 1847, [illegible] disease over the north-west of India and the Punjab in 1856; [illegible] 1861 the disease appeared in various localities in Persia, year [illegible] the shores of the Caspian Sea. At the same time the principal towns on the Persian Gulf were affected. It extended also *viâ* [illegible] cholera, scattered themselves, and disseminated the disease throughout Persia."*

In 1855, the north of Persia was again under the influence of cholera; it appeared also on the 14th of October at Beyrouth as well as at St. Jean d'Acre and Tiberia, but Damascus enjoyed perfect health. The caravan from this latter place, on its journey [illegible] free from the disease. In 1856 the north of Persia and the [illegible] stated, a fresh outburst of the disease occurred in the north- [illegible] also under its influence. Beyond this, I am informed by [illegible] 22 years cholera had appeared three times in the district; the most virulent outbreak of the disease was in 1857, when not only the inhabitants of the sea-coast, but those of the interior, were under the influence of the disease.†

In 1860 and 1861 cholera again invaded Persia, Kermanshah being one of the places principally affected; but the cities abovenamed by no means escaped its influence.

From 1861 to 1865 there was no further epidemic in Persia, having existed more or less constantly in Persia from 1851 to [illegible] throughout the same period the disease had almost become [illegible]

[illegible] at Mocca, Lohah, Hodeda, and Mocha; it was also very prevalent [illegible] days it attained its greatest severity. About the 8th of October [illegible] certain ports on the Red Sea, carrying on a regular trade with Aden *viâ* Mocha, Hodeda, Jedda, Lohea, suffered from cholera first of all. The disease appeared next at Aden, whilst Aden [illegible] the disease was last seen."

[illegible] to Damascus; on arrival there, however, the caravan was found to be absolutely healthy.

[illegible] tality in the caravan was very great. But again the salutary influence of the desert seems to have entirely destroyed all traces of the disease, for the pilgrims arrived at Damascus on the 10th of September in perfect health.*

From these historical facts, the bearing of my former remark upon the circumstances of cholera in Europe in 1859 becomes evident. The disease spread over the whole of northern India in 1856; it appeared in the north-east of Persia in 1857, and over a very considerable portion of the country in 1858, where, in fact, it had appeared annually for the previous eight years. [illegible] Persian Gulf and the Arabian shores of the Red Sea. It is evident, therefore, that Europe was imminently threatened by an invading cholera in 1858 from two directions, viz., *viâ* Persia, and by Egypt; and though we cannot now recover the missing links in the chain connecting the European outbreak of the disease in 1859 with its *foci* in Asia, nevertheless, the relation of the one to the other cannot be overlooked, and will form an important piece of evidence in our search into the etiology of [illegible]

Nor must we pass over the fact which is evident from Dr. Leith's Mortuary Returns for Bombay, that cholera was never absent from the island for a single season from 1850 to 1860. Dr. Leith says there was no "regular annual time of its maxima [illegible] years, the outbreaks or exasperations of the disease, as indicated [illegible] irregular periods."

1851	..	..	..	4,020
1852	..	..	..	1,155
1853	..	..	..	1,559
1854	..	..	..	3,553
1855	..	..	..	1,739
[illegible]				
1858	..	..	..	105
1859	..	..	..	2,285
1860	..	..	..	1,687
1861	..	..	..	1,251

Supposing, therefore, as some affirm, that cholera spreads [illegible] which, I need hardly say, are in constant communication with Bombay. In addition to this, within these ten years we have [illegible]

Our information regarding the history of cholera in Bengal [illegible]

* [illegible]

state of the country. We know, however, it appeared among our troops at Delhi from June to September, 1857, and some 16 cases and 11 deaths took place among the prisoners in the Dum Jail in 1858.* The Lucknow Garrison also suffered to a slight extent from cholera in 1857.†

During the year 1859 cholera was widely disseminated in Bengal, eastward of a line corresponding to about 80° east longitude, to the north-west of this we hear nothing of the disease. For instance, in the central Cawnpore jail [illegible] European and 330 prisoners (Natives) died from cholera; to the north-west of Cawnpore not one single death occurred in either of these classes of the community. In the Saugor division, however, there were 62 admissions and 29 deaths among the European troops on this account.‡

Several of the local epidemics which broke out in Bengal during the year were attended with considerable loss of life. Dr. Hugh Macpherson reports that the artillery at Dum Dum were attacked by cholera on the night of the 9th of August, 1859, and that out of a force of 1,407 men, 87 fell victims to the disease within a week, the epidemic then rapidly subsided and soon disappeared. Dr. Macpherson remarks "that the admissions were most numerous when the sky was overcast with clouds, and rain fell, and fewest when the sky was clear.‡ The disease was very prevalent at Barrackpore, Berhampore, and Lucknow about the same time. In May and June it was generated with terrible virulence in the Allahabad, Banda, and Humeerpore districts;§ and, as I have already remarked, it extended into the Central Provinces, visiting several stations in the Saugor circle.

[illegible] the year 1860 cholera prevailed to a terrible extent throughout Bengal Proper, and, in fact, from Assam to Oude, and from the sea-shore of the Bay of Bengal away into Central India; it even extended far up the Himalaya to Darjeeling. [illegible] deaths from cholera among the prisoners confined in the jails eastward of Cawnpore rose during these twelve months to 1,655, being, therefore, nearly four times as numerous as in 1859. Among the small European force at Morar, there were 89 deaths from cholera; at Jhansi 13; at Saugor 4; Nagode 15; and Jubbulpore 5. The prisoners in these stations together with the civil population suffered in an equal degree. So that we have evidence of cholera of a virulent type and extensive power of diffusion having been generated over the enormous tract of country above indicated during the early part of the year 1860. And, as we might have expected, the disease spread at the same time to Agra.

Dr. Walker, Superintendent of the Central Jail, at Agra, informs us that cholera appeared in the city in July, and extended slowly among the Natives:—"Rain had fallen sufficient to soak the ground, and even to be lying in pools in many places."‖ On the 10th of August cholera broke out among the prisoners at Agra and lasted 23 days, 816 cases and 175 deaths occurring from it; at the same time there were 24 casualties from this disease among the European troops at Muttra.

Dr. Walker remarks that of a party of 396 prisoners who arrived at Agra from Mynpoory on the 9th of August, no less than [illegible] died of cholera, whereas the deaths among the other convicts was only at the rate of 17 per cent. He attributes this excessive mortality in the Mynpoory party to the fact of their vital powers having been depressed from the fatigue, exposure to damp, and irregular supply of food they had experienced during their march into Agra. He was also of opinion that "the epidemic influence appears to have been on this occasion more widely spread, and more generally fatal, than in former years." From this statement of Dr. Walker's, which is borne out by his figures and from the history of the disease in 1859, together with its terrible virulence over the whole of Bengal Proper, the Central Provinces, and as far to the north-west as Muttra, we should naturally have expected to have heard of its immediate dissemination throughout the North-Western Provinces and the Punjab with the setting in of the rains of 1860.

I would call the reader's attention, however, to the exceptional state of these provinces. Throughout this year, they were subjected to unprecedented drought, which converted an enormous tract of otherwise fertile country into a desert. This arid waste was bounded to the east by the Agra district, to the west by Sirsah, to the north by Delhi, and to the south by Goorgaon; and although cholera spread from Bengal and central India up to the very borders of these districts, it in no single instance extended into this barren area, which constituted what Colonel Baird Smith describes as the famine tract of 1860-61, and which is very clearly defined in chart No. II. of his valuable report on the subject. Section 28 of this report refers to the mortality attributable to the famine; but among the diseases which affected the starving people, he makes no allusion to cholera. Throughout the whole of the jails in the famine districts, not one instance of cholera occurred; and there were only one or two cases among the troops, and some of them are described as "cholera billiosa." Dr. David B. Smith, who at this time was in medical charge of the civil station of Delhi, and therefore in the midst of all the suffering, expressly states that the first instance of cholera he heard of among the famine-stricken people was in *May* 1861. Small-pox and fever raged among the starving people; but from all the reports and returns I have read on the subject, the existence of cholera is never once alluded to during the year 1860 in the famine-stricken districts.

I think I am justified, therefore, in asserting that in 1859 a very considerable portion of this presidency was under the influence of epidemic cholera. Throughout the following year it was reproduced over the whole presidency, with the exception of that part of the country which had been affected by a grievous drought and thereby converted into a sandy desert.

It is almost impossible for those who have not experienced the influence of the annual rains in the north-west of India to realize the condition of the country after such a year as 1860. Colonel Baird Smith says—"It would be difficult to exaggerate its forlorn dreariness: it seemed denuded of its inhabitants; that monotonous brown tint of the untilled soil supressed everything else. It was only by some enquiry it could be learnt that even in this great waste there was cultivation in plots round the villages, and round the wells remote from villages." This is truly a faithful picture of a desert; and in this country, cholera never gained a footing during the continuance of the drought, although the disease raged around it.

It is not my province now to discuss the bearing of this fact on the etiology of cholera; but when taken in conjunction with the circumstances I have related as occurring in the north-west in 1831, they are very significant, and well worthy of our serious consideration.

This remark is strengthened by what follows, for no sooner had the rains of 1861 set in over the famine-stricken districts, than cholera burst out among its inhabitants with terrible virulence.

I [illegible] proceed to demonstrate this fact from documentary evidence bearing on the subject.

In 1861 cholera was reproduced over the whole of Bengal Proper. Out of 52 jails in this province, only 11 escaped the [illegible] number of deaths among the prisoners

* [illegible]

† [illegible]

‡ Mr. [illegible]

§ [illegible]

‖ Report on the North-Western Provinces for [illegible]

It is evident, therefore, cholera was reproduced over the area in which it was principally generated during the previous years; and this remark is applicable to the commencement of the [illegible] Agra and Meerut [illegible], where, as I previously stated, cholera had been very severe in 1860.

Dr. [illegible] B. Smith notices as that "The first heavy fall of rain at Delhi in 1861 occurred on the 31st of May," at which time cholera appeared among the inhabitants of the southern portion of the Goorgaon district, extending from the direction of the Bhurtpore territories. The disease rapidly spread among the famine-stricken people of the district, and reached Delhi on the 11th of June.* Dr. Smith remarks, "It is important to note that at this time there was not a single case of diarrhœa in the jail, and the amount of sickness in the station generally seemed to be below the usual average; it is well known that many cholera epidemics are preceded, introduced as it were, by the occurrence of a great amount of generally prevailing diarrhœa. It was not so in this instance as regards the city of Delhi."

It appears that among the prisoners, one patient only sunk from the effects of the disease within four hours of the time he was attacked by it; of the others, none died under an illness of less than nine hours.

Of H. M.'s [illegible] Regiment, Dr. Smith reports 80 men were seized with cholera; 57 of these were in a state of collapse on admission into hospital. "One man had no vomiting or purging throughout, but after death the intestines were found filled with rice-water fluid."

The men of H. M.'s 107th Regiment and the prisoners were attacked by cholera on the same day at Agra (7th July). The disease spread with alarming rapidity both among the Europeans and Natives; indeed, it had existed among the latter [illegible] Dr. Bassett writes from Muttra that the disease appeared among the Europeans on the 14th July.—"The weather being very close, the rain was unusually heavy, the wind continuing to blow from the east."

Dr. J. M. Cunningham makes a similar remark respecting the state of the weather at Bareilly, and observes that "during the year 1861 there have been 49½ inches of rain." He continues: "In what manner unusually heavy rains are connected with the development of the cholera poison, it is difficult to say; that there is some connection between the two, few can doubt. The heavy rains of 1856 were accompanied by a severe outbreak of cholera at Agra, Ferozepore, Lahore, and Umritsur, [illegible] the heavy rains of 1861 have been accompanied by a severe epidemic of cholera in the same places; Bareilly is little subject to even sporadic cases of the disease. But the inhabitants of the city suffered from it severely during the heavy [illegible] of 1856 and the disease, [illegible] has been [illegible] present with the heavy [illegible] of 1861."

Dr. J. C. Cuthbert reports that on the 6th of July, the [illegible] of Meerut was [illegible] by a heavy fall of rain, which [illegible] the [illegible] temperature. On the 17th of July, the first case of cholera occurred among the prisoners, and did not cease [illegible] 241 [illegible] admissions and 344 deaths from the disease. Cholera had, [illegible] the 30th of June.

[illegible] continued to extend steadily to the north-west, reaching Meean Meer on the 31st of the month. In this part of the country, the rains, though plentiful, hardly exceeded the average [illegible]

On the 6th of August and the following days, 15 cases of cholera, all of which were fatal, occurred among the European troops at Meean Meer; by the 14th of the month, all the [illegible] were more or less affected, and Dr. W. A. Green, (Inspector-General of Indian Medical Service,) [illegible] urged that removal was necessary. Unfortunately, it was found impracticable to move the whole of the troops out of cantonments at once—the country for miles round was under water: and although Captain F. Norman, the assistant quarter-[illegible] was [illegible] to move the [illegible] men out of the station, he found it impossible to select a dry encamping ground for them; besides, the commissariat was unprovided with carriage and other appertenances for a camp of the kind at a moment's call. The military authorities, however, did all in their power to forward Dr. Green's views, and on the 15th of August, three companies of her Majesty's 51st Regiment left the station; at the same time the Artillery marched to Shahdera, on the banks of the Ravee, ten miles to the north of Meean Meer. Subsequently, one single case of cholera occurred among the men of this party; but among the troops who remained in the station, there were no less than 457 cases and 261 deaths from the disease within the following ten days. In fact, after the 15th of August, cholera increased with such fearful rapidity, that the [illegible] in a few days were panic-stricken and hopeless.

In one regiment, out of a total strength of 1,002 men, 863 were employed as hospital orderlies, and of these, no less than 428 were seized with cholera. In the other European regiment at Meean Meer, of 203 cases of cholera, 137 occurred among hospital orderlies. It was not found possible, however, to determine if these hospital orderlies were more liable to be attacked than men who had not been exposed to cholera in the hospital, because all the men in the station had been on duty of this kind at one time or the other. On the other hand, we cannot overlook the fact that the medical officers and the whole of the medical establishment, together with the native servants, almost entirely escaped the influence of the disease, although prostrated by the fearfully harrassing nature of their duties. And what is more remarkable, when it was discovered that the European orderlies were unable to work any longer, some 30 Sikhs of the 31st Regiment were daily sent to take their place in the European hospitals,—not a single instance of cholera occurred among them.

The Government of India subsequently appointed a commission, presided over by a civilian, Mr. J. Strachey, to report on the circumstances of the outbreak of cholera in the Punjab. This action on the part of the Indian Government in 1861 was the first effort they had made since 1817 to gain any information on the subject of cholera among the troops serving in this country. There was no want of material at their command; the records of the medical board are full of reports and valuable matter bearing on the subject, an epitome of which had been sent up to the Government every year by the Board. But it was not until home influence had begun to tell on India, and after the country had passed under the direct rule of her Majesty, that it was found necessary out here to yield in some measures to what probably most Indian statesmen consider the prejudices of Europe on the subject of cholera. Hence the appointment of the commission to report on the epidemic of 1861. The first section of the report published by this commission had subsequently to be withdrawn and re-written, because it contained statements of a personal nature, reflecting on the character of individual officers; and to the revised report, published under the authority of Government, the two most influential members of the four commissioners refused to append their names; the dissenting officers being Dr. Linton, the head of the British Medical Service in India, and Colonel Crawford, of the Royal [illegible]

* [illegible]

† [illegible] at Agra, [illegible] p. 3.

These facts will explain my silence regarding the details and opinions contained in the report on the Punjab epidemic of 1861. And if this work be contrasted with that of Mr. J. Simon, R. Owen, and other scientific men on the cholera of 1854, the difference is very appreciable. The one, evidently the production of men deeply sensible of their responsibilities, the difficulty and magnitude of the work before them requiring their best energies and the concentration of all their faculties, which years of hard labour on these special subjects had ripened into mature wisdom; the other, as far as I can judge, evincing a very different spirit. Besides, I am credibly informed by officers who were at Mecan Meer, and who visited the cholera patients there in 1861, that the account of the hospitals given by the Reverend Mr. Sloggett during the epidemic is, to say the least of it, a very highly coloured picture, and yet this account is the one published by the Punjab Commission as authoritative, and upon which hangs much of their theory as to the hospitals having been the most direct cause of the dissemination of the disease.

Had Dr. Green's advice of the 15th of August been practicable, and the whole of the men removed from the station on the outbreak of the epidemic, it might possibly have saved much of the misery that subsequently occurred at Mecan Meer; but when once the disease had taken hold of the troops, to have thrust them out into tents in the pouring rain would probably have been followed by even worse consequences than befel them, and have been made the subject of just criticism, if not of severe censure.

GENERAL PARALYSIS OF THE INSANE.

By Dr. Wise.

One of the most remarkable points connected with insanity among the natives of India is the rarity of general paralysis. In the Patna Asylum Report for 1866, the deaths of two women, aged, respectively, 26 and 35 years, are recorded. With this exception, no other cases are cited in the reports of the Dhullumra, Patna, and Moydapore Asylums between 1862 and 1867. In the Dacca Asylum, between 1841 and 1867, I have only been able to discover 3 cases among 1,576 admissions, and 925 deaths. This infrequency becomes more unaccountable when the records of the European asylums are contrasted with those of Bengal.

Calmeil was of opinion that there was one general paralytic in every 15 male patients, and 1 in 50 among women. Foville calculated 31 general paralytics to 334 insanes, or 9·2 per cent. According to Bayle (1855), the proportion of paralytics in the asylums of Paris was 1 in 4; but Baillarger, on the other hand, gives for Bicêtre and Salpêtrière together the proportion of 1 in 16.

When we examine the assigned causes of this mysterious disease, the reason of its unfrequent appearance in Indian asylums is not explained, as the native is as much exposed to most of them as is the resident of Europe. Intemperance, sexual debauchery, excessive use of tobacco, mental excitement, violent emotional agitation, hereditary predisposition, and concussion of the brain following blows on the head, have either singly or conjointly been pointed to as the causes of general paralysis. The use of ardent spirits is certainly less common among Hindoos and Mahomedans than among Europeans, and this fact corroborates the statement of Guislain, that general paralysis is caused by the combined action of drink and study, or drink and trouble.

It seems probable, however, that if search is made in the case books of the different asylums, cases will be found classed under the head of chronic meningitis which were really cases of general paralysis. It is the hope that the record of the following cases will prompt those interested in the study of insanity among the natives of this country to investigate the registers in their possession, and to make known the result of their enquiries, that has induced me to publish the details of the only cases which have occurred in the Dacca Asylum during the last 27 years:—

CASE I.

Ram Kishore Rukhit, Hindoo, aged 45 years, was admitted into the asylum with dementia on the 23rd January, 1850. On his admission, he was in a state of nearly complete mental imbecility. In the following November, his speech became impeded, and the motions of his tongue and free movement of his jaw became impaired. He halted in walking, and he dragged his lower limbs after him. No further details of his case can be discovered. On the 11th December, 1851, he died of cholera.

At the post-mortem examination, a state of general congestion and engorgement of the cerebral circulation was observed. There was serous effusion beneath, and raising up, the arachnoid; also at the base of the brain, and in the ventricles; seated on the corpus striatum, on the right side beneath the lining membrane of the ventricle, was a spot of broken down brain, the circumference being about the size of an eight-anna piece. The ragged, degenerated, and softened cerebral substance was of a yellowish colour."

The above are all the particulars that I have been able to discover regarding this interesting case.

CASE II.

A Hindoo mohurrir, aged about 35, was admitted into the asylum in 1850. The following history was given by his friends:—He followed actively his business as a clerk, but was also passionately fond of singing and playing upon musical instruments. Upon the occasion of some festival, he spent the night in the bazaar, performing to a crowd of listeners: from that night he became insane. In October, 1850, while in the asylum, he was observed for the first time to drag his leg after him. On admission, it is noted that he was noisy, but that he answered questions put to him. By January, 1851, he could not be induced to speak, although he was heard to sing to himself at times. The further progress of this case is not to be found. In the report for 1851, it is stated that the issue being to all appearance hopeless, he was taken away at the earnest solicitation of his friends.

CASE III.

Radha Chamarnie, aged 45, a midwife by profession, was admitted into the asylum on the 27th December, 1860, in an insane state. She had previously been an inmate of the asylum from the 5th September to the 27th November, 1860. The cause of her insanity was jealousy on account of her husband living with another woman. On admission, she was melancholic, incoherent, intractable, sleepless, variable, unsettled, and very abusive. She took her food, dressed, and bathed, like a sane person. She was emaciated, and out of health.

In June, 1861, slight tremor of the whole muscular system, without paralysis, was noted. In September, the tremors increased; she had great difficulty in speaking and moving about. Her expression was idiotic, and her mental faculties were impaired. She had to be fed, as she was unable to feed herself. Bowels were regular. By blisters and mild stimulants, she rallied; but about the beginning of November, 1861, she became very talkative and excited, screaming at night without apparent cause, and rarely sleeping. Pulse weak, mental faculties less dull, and the muscular tremors less uncontrollable. On the morning of the 9th November, while eating bread, she suddenly choked, and was dead before the native doctor could reach her.

Post-mortem examination.—A mass of half-masticated bread, weighing 3 ounces 20 grains, was found lodged in the larynx

CASE IV.

His habits and disposition changed. He became violent, variable, talkative, and incoherent. He neglected his business, nudity. He was never addicted to gunjah, opium, or ardent None of his relatives were insane. While under observation in the dispensary at Gowhatty, the civil surgeon reported that he had an incoherent and unsettled manner; that he talked nonsense, and was capricious as regards food.

morphia was hypodermically injected. By the middle of next. Sensibility in the limbs was unimpaired. He talked in On the 28th August he had an epileptic fit, which lasted half an hour. On the 19th September he was unable to stand upright, and at night he rolled off his platform, and was unable to mantly. He talked incessantly and incoherently. He only himself or guide his hand to his mouth; his appetite was good. Sensibility was normal, but voluntary motion was seriously impaired. Between the 19th and 29th September he rapidly extremities, or to guide his hand. The limbs were in a constant tremor, and they remained cold and bathed in perspiration. the lips incessantly. The most distressing symptom of his disease was the spasmodic closure of the jaw, followed by violent grinding

the morning of the 7th October.

thick. The frontal sinuses were unusually large. In the left the arteries were very deep, and quite transparent. The membranes were not coherent. The arachnoid was found distended by a jelly-like effusion, which here and there was of a milky colour. The pia mater was not coherent to the convolutions. Its vessels were loaded with blood. Both lateral ventricles were enlarged and distended with serum—the right more than the left. A few cysts were imbedded in the choroid flexures, which consisted of large varicose vessels. The medulla between the corpora striata and optic thalami was occupied by a yellow albuminous deposit, which concealed the large vein which runs through this space. This deposit was of hard consistence, and

The whole of the cerebrum was anæmic; but the corpus striatum, in the right hemisphere, was as soft as putty, and of an ivory whiteness. The anterior lobes were less coherent than the other parts. The cineritious matter of this hemisphere

land open. No atrophy of the cord was detected. Considerable serous effusion existed. The cord itself was found to be of the consistence of butter. The grey matter was very pale; while the vascularity of the white was increased. The arteries at the base of the brain were healthy. The only other morbid appearances found were a few crude masses of tubercles at the apex of the left lung, a few atheromatous deposits in the

	2	14
	2	15
Heart	0	7
Liver	3	0
Spleen	0	5
Kidneys	0	9

In this case, the rapidity with which the disease progressed is peculiar. On the 25th August, the first tremors were observed.

NATIVE DOCTORS' ENGLISH

mosis in the whole position of trachea. Saw that of similiar kind on the right side of her surgical neck, one just below the ramus position of her right lower jaw; another one on the right side of her frontle bone; and one large, about two inches in length, on the circumference, is just above the internal angular also inflaminatory state.

turn downward. Prolapsus cateret mixed with blood, displaced little swelling on the right eye. Lung, conjested and full of froth; right aricle and ventricol full of darkish colour of blood

also congested. It was also seen that about ½ pound of reddish effusion of serum on the pelvic cavity. Brain congested. Vassels of the pia meter full of black blood; stomach full of ½ digested rice. Under these circumstances I conclude, that the lady died from the effects of strangulation made by robbers."

N.B.—The above is given *in original*, to shew how lamentably and absurdly deficient some Native Doctors are in a knowledge of English, and of forensic medicine. This is by no means an exceptional specimen.—Ed., *I. M. G.*

CASES FROM PRACTICE.

CASE OF HYDATID DISEASE OF THE LIVER; HYDATIDS (ACEPHALOCYSTES PROLIFERÆ) DISCHARGED BY THE BOWELS.

By J. Browne. A.B. and F.R.C.S.I.,

Surgeon, in Medical charge, Mussoorie.

On the afternoon of the 24th December, 1868, I was asked to attend Mrs. S., who had been ill since the morning of the 22nd December.

Her husband told me that she had always been a most active person, and had generally enjoyed good health, though he noticed that for sometime past she was getting thin and her appetite had failed. Her friends too, who only saw her occasionally, remarked how very ill she was looking. Her husband also told me that Mrs. S. had an attack of jaundice some ten years ago, and he considers that she has not been the same since then.

On the morning of the 22nd December, 1868, Mrs. S. was attacked with violent vomiting, and told her husband she felt as if there was a bar of iron across her stomach. He thought she was suffering from a bilious attack, and immediately gave her an emetic, which, having acted freely, afforded her some relief. She, however, had to continue in bed, being sometimes better, sometimes worse, and I was asked to see her on the afternoon of the 24th December, as on the morning of that day she had drawn the attention of her husband to a tumour in the right hypochondrium, and which she considered to be an enlarged liver.

On my first visit (24th December) I found my patient, a cachectic-looking subject, suffering from sharp fever, lying on the back, and complaining of pain in the hepatic region. Her pulse was 110, and of rather small volume; conjunctivæ slightly jaundiced; tongue thickly coated.

On examining the liver I found it to be much enlarged, extending fully an inch below the cartilages of the ribs, and across nearly into the left hypochondrium. There was considerable tenderness of the enlarged liver on pressure, and its surface was perfectly smooth, quite free from any prominences or inequalities; its thin edge could also be distinctly felt.

The urine was scanty, and contained a very copious lithatic deposit.

It is unnecessary, and would take up too much valuable space, to give a daily record of the case; but I shall briefly describe the most prominent and interesting events in connection with it, and which tended to complicate the diagnosis very considerably.

On the 29th of December there was effusion into the right pleura, and a few days afterwards there was some slight effusion in the left one. The pain in the hepatic region was persistent, and she was frequently troubled by sharp pains running, as she described them, through the liver to the back. She could lie, she said, with equal comfort and freedom on either side, or on the back; but, as I generally found her at this stage of the disease lying on the right side, I have no doubt but that she was most comfortable in this position.

On the 2nd of January she was in some respects decidedly better; she was free from fever, and the pulse was 96, but still there was the same amount of the effusion, and the tenderness on pressure. On the morning of the 3rd I was asked to find my patient in a very alarming condition. Her countenance was pinched and anxious looking, pulse very weak, and 120, she was unable to lie on the right side; complained of great pain in the right side, and over the abdomen as far as the umbilicus, and lay on the left side with the knees drawn up; in fact, there were symptoms of peritoneal inflammation.

On examination, I found the belly extremely tympanitic, and generally tender on pressure, but more so in the hepatic region, and over the course of the transverse colon. She was unable to move off the left side without assistance, and even then the movement caused her most intense agony. At this period she suffered for about 72 hours from retention of urine, the catheter being required.

On the 5th January, the tympanitis was in a measure relieved, but the abdominal tenderness still continued; the decubitus was still on the left side, with the legs drawn up; and, in addition, there was a remarkable and rapid increase in the hepatic enlargement, which now extended to the umbilicus, and nearly to the crest of the right ilium; still, the surface of the tumour was perfectly smooth, and at times I fancied I could distinguish indistinct and deep fluctuation.

At this time Mrs. S. began to lose flesh rapidly, and had profuse night sweats.

From the 5th to the 10th January, the abdominal tenderness had become less; the tympanitis had disappeared; but still the hepatic enlargement was gradually increasing, and did not present any sensation of fluctuation more than I have before mentioned, nor was the surface of the tumour otherwise than smooth, though a marked fulness of the right side was visible. Altogether, at this stage, the case looked most unpromising, and a fatal termination of it expected.

On the morning of the 10th, her pulse was 128, and very feeble; she complained of extreme debility, and was perspiring profusely. In the afternoon of this day, her bowels were moved, and her husband was surprised to find that "more than half the motion consisted of globular gelatinous-looking substances, and varying in size from about that of a hen's egg to a gooseberry." After this motion she expressed herself as feeling great and immediate relief. During the night and next day, she had some nine motions; the few first containing hydatids, the latter ones only containing the empty membranous sacs of others; and Mr. S., a most accurate observer, conjectured that, altogether, some 500 of these entozoa must have been passed. I forgot to mention that on the 7th and 8th Mrs. S. uffered from dysenteric symptoms.

This case presents several features of unusual interest, the most prominent amongst which are, perhaps,

1stly. The apparently sudden and very rapid hepatic enlargement. Mrs. S. assures me that she never had any idea of enlargement of liver until the 24th December, 1868.

2ndly. The double pleuritic effusion.

3rdly. The sudden symptoms of peritonitis.

4thly. The extreme tympanitis.

5thly. The dysenteric symptoms.

6thly. The rapid emaciation and profuse night sweats, symptoms which pointed to the probable formation of an abscess—but then there had not been any rigor.

7thly. The channel selected by nature for the discharge of the hydatids, the rapid subsidence of the hepatic tumour, and the general amendment of the patient after the discharge of the hydatids.

I did not see any of the hydatids till after the rupture of their cysts, as I thoughtlessly asked Mr. S. to keep them in cold water; and I have no doubt but that the cysts became ruptured owing to their over-distention by the process of endosmose; however, I am of opinion, from the examination of the empty cysts, and from Mr. S.'s description of them, that they were acephalocyst hydatids.

I was very glad in being able to avail myself of the able advice and experience of Dr. Fogo, Royal Horse Artillery, from almost the commencement of this lady's illness, and to him my best acknowledgments are due.

A few remarks on some of the most prominent symptoms already mentioned, and on the treatment pursued, as also on the [illegible] may perhaps form the subject of a second paper.

P.S.—Up to the present, January 20th, Mrs. S. has been gradually and steadily improving, but is very weak. If all goes on well, we will proceed to England *viâ* the Cape in February.

FEIGNED TUMOR OF THE JAW.

by J. Macleod Cameron,

Civil Assistant Surgeon.

Lukhya, a Mus[illegible] aged 16 was brought to me on [illegible] by her parents.

[illegible] about a year before they had observed a small [illegible] on the right side of the lower jaw in front of the angle. It continued to increase very slowly [illegible] to give it much attention, but at last, they said, they had thought it right to consult a surgeon.

There was a tumor on the left side of the face, rounded, of the size of a tea-cup. The skin slid easily over it, and at its [illegible] appeared to be at the point of suppuration. The tumor was [illegible] consistence, and seemed equally [illegible] in every direction. The lower jaw [illegible] the tumor, and the girl complained of great pain. In spite of the suffering she had undergone, she had not lost flesh, and the right cheek was plump and rounded.

On examining the [illegible] I observed the ends of two [illegible] of a black colour, which hung from the corner of the mouth. On requesting [illegible] she made [illegible] it was a matter of some difficulty, as she was perpetually starting back, and complaining of great pain). I noticed certain lines, which seemed to me to indicate either that the bands were pieces of cloth inserted into a cavity in the tumor, or that cloth of some sort had been recently placed in contact with them, so as to leave its impression. I asked the parents if any cloth had been introduced into the mouth, but was assured that such was not the case, and the girl corroborated their statement.

I [illegible] the head with [illegible] using a little force, succeeded in [illegible] the girl [illegible] and endeavouring to seize my hand. The band was simply a piece of [illegible] cloth. On [illegible] the mouth I saw what was undoubtedly a second piece of cloth, which I also removed, and thus I went on removing piece after piece till every vestige of the tumor disappeared. The girl looked foolish and sulky. The parents seemed stupefied, and could not at once realize that their daughter's illness was pure deception.

They brought her to me again on the following day. There was not the slightest trace of disease. The teeth were sound; the jaws were [illegible]. The right cheek was, as I have said before, plump and round; the left was [illegible] and had a dazed and void of expression. The centre of the cheek, which formed the most prominent part of the tumor, was now shrivelled up, like the skin of a withered apple.

The tumor was composed of 23 pieces of cloth, weighing, when washed and dried, 4 ounces.

Monghyr, January 25th, 1869.

A PUNCTURED WOUND OF THE LEG, WITH COMPLETE PERFORATION OF THE TIBIA; RECOVERY.

By Henry O. Wilson,

Civil Assistant Surgeon, Munneerpoor.

Kolum Shaik, a strong, robust man, about 35 years of age, was admitted on the 24th April, 1868, into the Mymensingh Charitable Dispensary, with a recently inflicted wound in the upper part of the left leg, just below and to the outer side of the outer edge of the patella. I found this wound was perforating, about ½ of an inch, the pointed extremity of the iron head of a kench, a spear used in exercises by the natives for killing fish, the long shaft being made of wood; in the barb were four small projected wounds which had healed.

The patient stated that four days previous to admission, a man had thrown at him a bunch of these spears. Four of them struck him in the back and one of these, penetrating deeply into the leg, broke off when the man and I were with the shaft.

Immediately after receiving the injury, the man went to a [illegible], where, forcing the point of the spear-head just beneath the skin in the front part of the leg, cut down upon it, and made several fruitless attempts to drag it out by its point.

When I saw him, I cut down in the popliteal space, and pushed back the spear-head by its point, until I felt the other extremity behind, at the spot where it had penetrated the bone; from this position it was easily withdrawn. The spear-head measured two inches in length, its larger extremity having a diameter of ½ of an inch. It had passed from behind forwards, outwards, and a little downwards, forming in the tibia a canal about the size of a large goose-quill.

In two hours, I could [illegible] a probe a few small bone fragments of bone.

I saw him early after the operation. I gave five grains of calomel with a grain of opium, and at night an [illegible] containing 25 minims of [illegible]. Cold water dressing was applied to both wounds.

25th.—A little feverish; complains of but little pain in the leg; some small fragments of bone have come away from the posterior wound. Ordered a saline mixture every four hours; continued the cold water dressing.

26th.—Some [illegible] have been coming away from the anterior wound; still a little feverish. Applied to the anterior wound a [illegible] dressing to the posterior wound; repeated the saline mixture.

27th.—No fever. Ordered quinine mixture; wounds dressed as before.

30th.—Complains of very little pain in the leg. Ordered iron and quinine mixture; turpentine and resin ointment to be applied to both wounds.

1st May.—Complains of pain in the knee-joint, which is slightly swollen; no feverish symptoms. The limb to be treated with the rest of [illegible], continued the mixture and dressing as before.

4th.—The swelling in the knee-joint has subsided; is free from pain. Mixture and dressing as before.

From this date the man steadily improved. On the 26th of May a small superficial abscess was opened in the calf of the leg. On the 31st May he was discharged.

Remarks.—The attention of the profession has been lately called by Dr. Fayrer to the occasional occurrence of osteomyelitis after amputations, and severe injuries to the bones. This case illustrates how serious an injury may, under some circumstances, be inflicted on a bone without this disease resulting. For four days a foreign substance lay impacted close to the articular extremity, and, consequently, in the most cancellated and vascular portion of a long bone. In the first attempts to extract the foreign substance, the bone was subjected to considerable violence, yet the bone was repaired without the occurrence of any abnormal inflammation.

The slight inflammation in the knee-joint was probably only sympathetic; the abscess in the calf of the leg was the probable result of a few drops of pus finding their way down the leg from the wounds before their final closure.

A DISPUTED CASE OF OBSTINATE COSTIVENESS.

By Gopaul Chunder Roy,

Teacher, Medical School, Nagpore.

A man, aged about 50 years, is brought to the hospital with symptoms of obstinate costiveness. The history of the case goes on as follows:—That for the last two years he had been suffering, off and on, from irregularity of bowels; sometimes passing 4 or 5 stools in a day, at other times none. At the middle of the night, about 4 hours after his usual meal, he is roused with a pain in the abdomen, which became so unbearable, as to induce him next morning to ask for relief in the hospital. He is seen 8 or 10 hours afterwards with the following symptoms: Countenance anxious and indicative of collapse; eyes sunk and staring; cold perspiration over the forehead, extremities in an algide condition, pulse barely perceptible at the wrist, respiration thoracic, abdomen tensely bloated and tympanitic. Had two natural evacuations in the previous day, but none since the accident. Thinks he will be relieved if the bowels be moved, and earnestly craves for a purgative. An injection given by the native doctor was returned, bringing away little lumps of feces, with no relief of urgent symptoms; no vomiting. Passes water, legs flexed and drawn up. Complaining of a tension in the abdomen, but could bear slight pressure over it without wincing. He remains in that condition up to evening, and dies, retaining his consciousness to the last, within 18 hours

from the first appearance of the symptoms. There was no external hernia. The post-mortem examination was refused.

Such being the data of the case, let us theorize on it and try to elucidate its nature. Was it a case of internal strangulation or of perforation of intestine? The amount of evidence weighs equally in favor of both conjectures; but by signalising one set as primary symptoms, we may expect to come to a definite conclusion. The necessity of determining between the two diseases will be evident when we consider the diametrically opposite treatments that are usually adopted in each instance, for whilst in one the main remedial measures lie in heavy injections, the same treatment in the other will aggravate the patient's suffering, if not actually hasten his death. To begin, we meet with the most prominent symptoms as *collapse*. It is a known fact that collapse sets in earlier in injuries in the abdomen than in any other organs. Hence, the collapse and occasional death in blows over the stomach, in rupture of vessels within the abdomen, in rupture of spleen, kidney, or liver, in perforation of intestine and extravasation, &c., in strangulated external hernia, we meet with a small wiry pulse, if the strangulation is too tight or long continued; but this condition is quite different from what we ordinarily term collapse. Here collapse supervenes as the result of gangrene of intestine, and not otherwise, and then even its symptoms become first apparent in worst cases not before some hours after the accident. Let it be remembered that strangulation external to the abdomen is quite different in its nature and degree from strangulation produced within the abdomen. In the first we have the intestine tightly grasped after its escape through a small resistent hole; in the second, it gets obstructed generally by a loop getting twisted on itself or by passing underneath a band of mesentery during the natural intestinal peristaltic action. To show that in one case pressure is sooner exerted and more intense than the other, I may bring forth the following reasons:—1st, that in strangulated external hernia, the pain from the beginning is unbearable, whilst in the other variety of intestinal obstruction the patient begins to feel pain after a long time, perhaps when the accumulated fœces and gas begin to distend the intestine; 2nd, that in intestinal obstruction the patient lingers for some days, when the obstruction is not removed (they rarely die under 3 days; there may be exceptional instances), and after death the post-mortem examination reveals in but a few instances commencing gangrene of intestine; whereas, in srangulated hernia, the intestine generally passes into a state of sphacelus within 24 hours, the late appearance of gangrene being here exceptional. The deductions from the above agreements can be summed up thus. That owing to a greater amount of stricture in the strangulation of external hernia, the intestine may die within 8 or 10 hours; but in internal obstruction, where the pressure is less acute, it is rare to find in general run of cases death from gangrene and its symptoms within so short a period. It will be preposterous therefore to suppose in the present instance collapse to have been caused by early supervention of grangrene, for although the patient was not seen earlier, and consequently his condition just after the accident was not known, yet there was no doubt of the existence of marked depression in him at the time when he came under our observation. Moreover, the previous history, the age of the patient, the suddenness of the symptoms, and the rapid death, are all favorable to the occurrence of perforation. The tympanitic state of the abdomen was due to effusion of of gas and fœces in the peritoneal cavity through the rent caused in the intestine.

It has been urged by my colleagues that the obstinate costiveness is not observed in cases of perforation, for enough of continuity of surface is still preserved to allow the gas and the fœcal matter to find their way from one part of the tube to the other. In opposition to this, I may assert that although this is practicable at the commencement, the effusion and accumulation of gas in the peritoneum afterwards becomes so great as to produce collapse of the intestine, and we can well understand how fluid will entirely run out of a tube through a hole made in its wall when it is made to traverse it from one end to the other, not by a rapid, but by a *slow*, peristaltic action.

As the want of post-mortem examination in the present case has left its nature a disputed point, I would take the liberty to invite the opinion of our brethren in the profession to cite instances in favor of one or of other diagnosis verified by the post-mortem examination.

Nagpore City Hospital, 10th February, 1869.

CASES FROM PRACTICE.

By S. C. Chatterjee, B.A., M.B.,
Sub-Assistant Surgeon, Azimgunge.

CASE I.—OF LINEAR EXTRACTION COMPLICATED WITH PROLAPSUS IRIDIS.

Bhoodhos Sing, a strong-built up-country man, of short make, aged about 55 years, was admitted into the dispensary on the 18th of July last with cataract in both the eyes; the right one more affected than the left. I selected the right one as fit for operation. Pupil normal; iris healthy looking; tension normal. No supra or circum-orbital pain. No vascularity of the conjunctiva. An ophthalmoscopic examination ought to have been made previous to the operation, but unfortunately I had no instrument, so I could not make any examination. The patient having been brought fully under the influence of chloroform, I performed the operation called linear extraction, in the way recommended by Dr. C. Macnamara, but without any iridectomy. The cataractous degeneration of the lens was of the mixed variety, a hard nucleus surrounded by soft lenticular substance.

A thin cotton compress and bandage were put on.

19th July.—Slight pain in the eye; wound in the cornea has healed but partially; nearly one-third of it, at the upper part, remaining ununited, and a bit of the iris separating the two segments. I would have used a saturated solution of calabar bean to contract the pupil (as it was somewhat distorted), but as there was none in store, I applied extract opii round the eye.

Ordered.—Ol. ricini. Pad and bandage.

The cornea was looking hazy; no effusion of blood.

21st.—Eye looking worse; a little bit of the iris protruding through the ununited portion of the wound; much pain in the eye.

Ordered.—Extr. opii round the eye. Tr. opii. mxv. thrice daily. Pad and bandage.

26th.—Iris gradually protruding outwards; much vascularity of the conjuctiva; pain very severe, specially at night; cornea also ulcerating at the cut edges.

Ordered.—Zinc lotion (gr. ij-ʒ) to be dropped into the eye. Pad and bandage.

I intended only to keep down the inflammation by weak astringent lotions, without any meddlesome interference.

31st.—Ulceration of the cornea and prolapsus; irides quite stationary

5th August.—Ulcer healthy looking; prolapsus not increasing; continued dressing as before.

21st.—Iris gradually receding back; ulcer tending towards healthy cicatrisation.

25th.—Much better now; prolapsus of the iris no longer existing; iris has receded, and the ulcer almost cicatrised; slight vascularity of the conjunctiva only remaining. There is slight effusion of lymph into the anterior chamber.

Ordered.—Alum zinc lotion. Bandage.

Patient discharged on the 1st of September. Could see dimly to grope his way about in the room; unable to make out features. In fact, a little better than what he was previous to his admission.

I bring this case to the notice of the profession only because it will be interesting and instructive to those who, like me, have just commenced to perform the operation.

The incision I made through the cornea was, as Dr. Macnamara recommends, "a little anterior to its junction with the sclerotic," nor was it so large as to easily admit of a prolapse.

I am rather inclined to believe that the unfavourable termination of this case was solely attributable to the wretched state of our present dispensary house, both with reference to the accommodation it affords, and the site it occupies; nothing can be more miserable than what it is at present. The rooms are mere cells—dirty, damp, ill-ventilated, and what not! I operated upon another case, in the person of an old woman, outside the dispensary, with the happiest results. In conclusion, I have only to say that this has remarkably manifested the recuperative powers of nature. Every one who saw the case thought, and most reasonably, that the patient would eventually lose her eye.

CASE OF [illegible] EXTRACTION.

[illegible]

Ordered.—Liquor atropiæ. Pad and bandage.

CASE OF RETENTION OF URINE—PARACENTESIS VESICÆ—RECOVERY.

By [illegible], Medical Subassistant, [illegible].

[illegible] gonorrhœa at different times many years back, neither of which undergone. The gonorrhœa went on from bad to worse, stricture which he sought relief at the hospital, with the following penis and scrotum swollen, probably from a little extravasation bowels bound; and countenance moderately anxious.

relieving the bladder, viz., hot fomentation over the hypogastrium, catheterism, aided by warm hip opii enemata, chloroform inhalation, &c. Both the silver and gum elastic catheters were tried, but without success. The patient being not very restless, and there being no more symptoms of extravasation of urine, it was decided on towards evening to forbear interference during the night, in order to permit the urethra to recover from the swelling and congestion by the time, and accordingly [illegible] ter was again tried, but the instrument being in a deteriorated state, could not be passed through the stricture. The symptoms attendant on retention gradually became urgent, so that some immediate operative measures to rescue the patient was deemed imperative. At 1 p.m., 34 hours after retention, with the permission of Dr. Ellis, I tapped the bladder two inches above the [illegible] parts to let out the extravasated fluid. The tubes were secured wounds were properly dressed. Immediately after the operation, the patient felt himself greatly relieved, and an opiate was administered to ensure sleep. In the evening the bowels

For the first few days, the urine was dribbling through the wounds in the perineum and scrotum, but principally through the tubes, and mixed with purulent matter, consequently the tubes were taken out on the sixth day of operation, to remove [illegible] wound to clean out the interior of the viscus, but on a subthe tepid fluid, which could then be easily thrown into the organ perviousness of the canal. All this time the patient's strength [illegible] quinine, which had their desired effects; the dribbling through the urethra soon turned into a regular stream, and the patient was enabled to evacuate his bladder at will. When the usual course of the fluid was thus re-established, the wounds on the pelvis and genital organs showed a tendency to heal, and in the course of one and half months cicatrization took place on all the wounds. The patient now passes water in pretty good streams, but mixed with much discharge from the urethra; and as there is still much irritation going on in the urethral canal, it has been thought proper to allow him to visit home for a change, without further confining him to the hospital air for the present, as the attempt at dilatation of the stricture would be ineffectual under the present circumstance.

It may not be out of place to observe that retention of urine, and consequently over-distention of bladder, when suffered to remain for a long time, may in some cases result in the paralysis of the organ. A case in point occurred to me when in charge of the dispensary at Crissa. The operation under consideration was performed in this case on the fifth day of retention, but the bladder never regained its power, notwithstanding all the medicines and appliances for the period of a month, during which the patient was under our treatment in the hospital.

Humeerpore, 9th December, 1868.

Notices to Correspondents.

[illegible]

The Indian Medical Gazette.

INDEX FOR 1868.

The above is now ready: and we shall feel obliged by subscribers intimating whether they wish it sent loose, or whether they prefer to return their Nos. for 1868, and receive in exchange a bound Vol. complete with the Index. The cost of binding will be Rs 2 8

WYMAN & CO.

[illegible]

A MANUAL OF THE DISEASES OF THE EYE.

BY

C. MACNAMARA,

[illegible]

Price, Rs 8

WYMAN & Co., Hare street, Calcutta.

[illegible] Medical [illegible] ON ONE SIDE [illegible] matter can be [illegible] the mouth by public, else [illegible] Messrs. Wyman & Co.; [illegible] THE PRINCIPAL SIGNS THROUGHOUT INDIA TO EARN-

WYMAN & Co.,
Proprietors.

"You have seen the picture of [illegible] Hunters at work. Are they [illegible] would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

NATIVE MEDICAL PROGRESS IN INDIA.

It is very much the fashion to cry out against anglicised Bengalees—and justly, it is too often thought, only to the extent to which they may have imitated the vices of Beau Brummell or fraternized with the devotees of Bacchus. But they are a little better than this, too. They are profiting as well by the virtues as by the vices of their English models.

There is a society in Calcutta, composed of educated Bengalees, who are endeavouring to introduce annual "national gatherings" in the room of the Churruck Poojah, which is steadily disappearing, as Sir J. P. Grant prophesied it would, under the force of improved native opinion. The committee of this gathering (Choitra mêla) have endeavoured to provide an *intellectual* stimulus in the "upper stories" of men, in place of that produced by "hook swinging" in the lower.

They have offered prizes—too small, we fear, considering the objects—for essays and treatises on various subjects: for, amongst others, a treatise on some of the physical sciences, and upon the best essay, in pure Bengalee, on the anatomy of the human form according to the medical science of this country. The amount offered is only Rs. 100. We venture, however, to enquire what is meant by the "medical science of this country." The anatomy of the human form is unchangeable, whatever [illegible] anatomy in which it is described, and whatever the nature of the medical science that is based upon it. What is the essayist to represent? Whether the medical science be one that recognizes [illegible] from whence forty blood vessels originate, or whether it be in accordance with the views of the eminent practitioners of the nineteenth century,—the human form divine is the same. We presume that the intention is to secure anatomical descriptions of the body as represented by the beautiful models that grew under the chisels of the Grecian anatomists. We cannot conceive that any other medical science is intended than that which has been imported from the West. Were it otherwise, the noble example of Modoosoodun Goopto would, indeed, have been thrown away.

MEDICAL MISSIONARIES IN INDIA.

It is much to be lamented that the functions of the physician [illegible] are not more extensively blended with those they are, in the [illegible] of Christendom. How was it that Luke was called to Him who [illegible] "the beloved physician" and [illegible] of the early days of Christianity, when the [illegible] "the gift of healing" was given to be used for the [illegible] of men? How is it that we find the first martyr, [illegible] a physician? Pantænus, the first supplier of Jerome's [illegible] was a physician. Even the [illegible] practised by the priests among several of the nations of antiquity; and the medico-theosophists, the Essenes of Judæa, pertained the combined [illegible] in curing the [illegible] and curing the [illegible]. The [illegible] are also [illegible] numerous and striking. Now, we see Peter curing the importunate beggar at the gate of the Temple and filling the people with wonder and amazement at his skill; now, restoring to health Æneas, the paralytic, at Lydda, thereby so astonishing the people, that, when they saw these works, they "turned to the Lord."

Again, during the persecutions of the Christians at Lyons, one Alexander, a physician and an earnest preacher, became a martyr to his cause, and was destroyed by wild beasts in the amphitheatre. Then Columba, the laborious and much-honored apostle of the ancient Picts and Scots, now spreading the gospel, and now practising with remarkable success as a physician.

As the world's age increases, we hear of monks whose chief object was to provide physical and spiritual relief for the unfortunate and the outcast; of laymen and ecclesiastics combining to take care of the sick in hospitals; of even Jesuits making the care of the sick the most prominent of their duties. Three hundred years ago, the Protestant churches sent missionaries to the heathen; but, "during the first 150 years of that time, there is no record of any Protestant physician or surgeon having consecrated his profession to the service of Christ in connection with the preaching of the gospel." But, then, an English general not only set this duty before the Society for the Propagation of the Gospel, but nobly provided the means. He bequeathed some West India property to the Society with these instructions,—"That the plantations should continue entire, and that 300 Negroes, at least, should always be kept thereon; and that a convenient number of professional [illegible] should be maintained there, who should be obliged to study and practice physic, and chirurgery, as well as divinity, that, by the apparent usefulness of the former to all mankind, they may both endear themselves to the people, and have the better opportunity of doing good to men's souls whilst they are taking care of their bodies; but the particulars of the constitution he leaves to the Society, composed of wise and good men."

We have quoted these words in their entirety, as they express, to a great extent, what we would wish to say in advocating the cause of medical missions in India.

But General Codrington made a fatal mistake in providing for the education of medical missionaries *on the spot*, for, however [illegible] we may create and *adapt* the [illegible] in a tropical country, the administrative, or controlling, authority should be *imported*. The requisite zeal and energy cannot be expected in natives of hot climates. It is not said that this was the cause of failure in General Codrington's scheme, (for fail it did,) but that the circumstances of West Indian Islands were not such as to make any of them fit for the establishment of a school of medicine, even on a small scale; added to this, lawsuits with the executors and frequent hurricanes helped in bringing about the failure. The school was indeed established, [illegible] and [illegible] and stipends were allowed to those who were desirous of prosecuting their studies in England, either in divinity, law, or physic.

Subsequent to this, we hear of the Moravians of Germany sending Dr. Hocker, a physician, and Mr. Rueffer, a surgeon, to Persia, to labor amongst the Gaures, descendants from the Magi, [illegible] the Last [illegible] surgeon, who, after two voyages, decided upon remaining in [illegible] Christianity and to [illegible] the [illegible] at the Bagdat Mission [illegible]

step of marrying one of their women!

Later on, we hear of Colman and Price in Burmah, (intimately [illegible] renown as an oculist, that he was summoned by the king to his [illegible]

We [illegible] by an article, by the same author, on "Missions," in the seventh edition of the *Encyclopædia Britannica*. So thoroughly in accord with our own views are those expressed by this author, that we cannot refrain from transcribing his own words.

"It would [illegible] profession of physic, it would be attended with many advantages; for there is something suspicious in a foreigner remaining long in a country without an openly defined object. The character of a physician has been always highly honored in the East, and would give an easy and unsuspected admission to a familiar intercourse with all classes and creeds.*** He who is a physician is pardoned for being a Christian; religious and national prejudices disappear before him; all hearts and harems are [illegible] dying the elixir of immortality. He, more than any one else, [illegible] *** In many cases the cure of the body, as in the early miracles, might precede the cure of the soul; but, if not, some positive good is done when science is enriched, diseases removed, and the gratitude and respect of many secured.*** The employment of physicians as missionaries, which has only very lately and very partially been practised, has been attended, on the limited scale on which it has been tried, with yet happier results than could reasonably have been expected. It has opened a new fountain of humanity in the hard and selfish breasts of distant nations, to see the strange spectacle of a man, in imitation of his Saviour, 'going about doing good,' and healing the sick. Those who are [illegible] these diseases of their bodies; and, though missionaries may complain of the want of listeners, a missionary physician [illegible] reason to lament the want of success in treating the cases that are submitted to him."

What Mr. Cavers says on the subject of foreigners, without any *apparent* definite occupation, being suspected in a heathen country, will be appreciated by many missionaries in India. [illegible] of the pastor's residence amongst the people; and it is only when they have satisfied themselves that the man of God is [illegible] year amongst them in the villages in the same unobtrusive and unostentatious way, that they begin to look upon him as a harmless person. It is evident that where the physician's [illegible] the heathen, much spiritual good, as the result of affectionate intercourse, may subsequently be expected. It must not be supposed that we advocate the practice of medicine as a trap for [illegible] We [illegible] in the light of day, without any attempt at the exercise of undue influences. At the same time, let missions reap all the benefit, (as they are certainly entitled to do,) that *medical* missionaries [illegible] of healing. We shall continue the subject in our next issue.

[To be continued.]

[illegible] "Missions," [illegible] Medical Missionary Society, [illegible] "Medical Missions."

CUILIBET IN ARTE SUA PERITO EST CREDENDUM

We have received a communication, in connection with [illegible] sanitary improvements in Bengal up the end of 1867, published by order of the Secretary of State for India. The memorandum now contains a most valuable review of sanitary progress in the Bengal Presidency previous to 1864, by Dr. E. Goodeve, late of the Bengal Medical Service, who, after perusing the [illegible] Bengal Sanitary Reports, has made certain suggestions of practical value for their improvement in future years.

With reference to the origin of sanitary measures in India, Dr. Goodeve remarks: "Should the history of the Royal and Bengal Medical Departments (in India) ever be written, it will be found that for many years past they have strongly advocated and promoted sanitary improvement in India, and that many individual members of the Royal and Bengal Medical Services, amongst whom must be reckoned that earnest sanitary reformer, Sir J. Ranald Martin, have been foremost in the good work." "It was chiefly, if not entirely, among medical men that any knowledge of the causes of disease existed, and from them that any warning in the matter of prevention could be obtained. Hence the progress of preventive medicine depended upon the progress of medical research in India, and upon the attention which medical officers could command from the ruling powers. The records of the Medical Board, and the [illegible] show this conclusively." "Besides official reports, which were not generally accessible, the [illegible] published separately in the medical periodical literature, in the *Calcutta Review*, [illegible] papers, chiefly by members of the medical services during the last 30 or 40 years, and the influence of [illegible] and recording both general and professional opinion on sanitary matters." With this preface, only a few sentences of which are extracted, Dr. Goodeve gives a list of the principal measures [illegible] during the last 30 or 40 years, and he considers the history of each under three separate headings. We will here [illegible] the subject:

1. Conservancy.
2. Reports on the [illegible] of stations.
3. Reports upon [illegible] of disease, or manifestations of unhealthiness.
4. [illegible]
5. Improvement of barracks and hospitals.

6. The condition of the soldier, involved in his diet, dress, occupations, and amusements, &c.
7. Conveyance and movements of troops.
8. Hill sanitaria.
9. Health of prisons.
10. Native medical education.
11. Sanitary reform in native towns, villages, &c.
12. Statistics and registration of disease.
13. Sanitary literature.

And in conclusion he remarks:—

"In summing up what has been done in sanitary measures in the Bengal Presidency within the quarter of a century preceding the operation of the permanent (Royal) Sanitary Commission, the present sketch shows that it has truly been a period of progress, and that a large measure of success cannot even yet be claimed for what has been done. The teachings and examples of sanitary reformers in England have been quickly followed in India, but the obstacles in the path of progress have been far greater than at home; in spite of all, however, much has been done, and the ground cleared for future action."

With the experience thus gained in this century of the value of medical officers and medical knowledge in all works of sanitation, it seems the more extraordinary that, as progress advances, it would appear to be the aim of the Government to take all such questions out of the hands of those in the medical departments most experienced by rank and position, and therefore the best qualified to offer opinions upon them; such an idea is evidently foreign to the judgment of the Home Government, who, while looking at the subject from a distance, judges more clearly perhaps of its bearings, but who have given in to the Government of India, as perhaps not wishing to interfere too much in its manner of carrying out details.

In April, 1867, the Government of India was addressed by the Secretary of State, and its policy "of appointing the principal officers of health under the supreme and local Governments to be deputy secretaries, was questioned;" but in the same despatch the Secretary of State gives his opinion that the Inspectors-General of Hospitals, rather than the Inspectors-General of Prisons, should be the principal health officers whose duties should be consultative only, "and that any measures determined on in consequence of their advice, should be carried into effect through the offices of the several departments of Government to which the subject might most appropriately belong."

But the Government of India, following the advice of their non-medical (civil) sanitary advisers, reject this apparently practical scheme, and in a despatch of August of the same year, state, "to introduce a really effective sanitary administration, special organisation would be requisite, and that such should be welded with the general civil administration of the country, and be immediately under the control of the chief civil authorities." The proposed double system was objected to, whereby these arrangements would be partly under the authorities, and partly under the Inspector-General of Hospitals in each province—a system considered likely to create difficulty and delay, if not obstruction! And "it was now proposed that instead of Inspectors-General of Prisons, as formerly suggested by the Viceroy, or Inspectors-General of Hospitals as preferred by the Secretary of State in Council, medical officers, specially selected, should be appointed for the exclusive duty of principal health officers."

This is the origin of the present Sanitary Commissioners of provinces—a great and noble step in the right direction, were they but placed under proper authority.

But we cannot agree with the civil, *i.e.* non-medical, advisers of the Government, who directed the movement, and whose opinions are that the question of sanitation, involving as it does the whole science of preventive medicine, should be immediately under the control of the chief civil authorities.

The proceedings of Government itself thus define the duties of the Sanitary Commissioner with the Government of India:—

"There is no sanitary authority which can exercise any check upon the recommendations of the local sanitary officers, except the Sanitary Commissioner with the Government of India."

"Possessed of all available information relative to the sanitary condition of the civil population, the native army, and the prisoners in jails, he should always be in a position to give to the Government of India the best opinion regarding many matters of importance affecting the health of the European troops."

Is it reasonable to expect that the constitution of the present Sanitary Commission could be any real authority upon the last item, involving perhaps the most important part of a Sanitary Commissioner's duties?

There can be no question but that an experienced administrative officer of the medical department should be attached to each local Government, to afford advice on all medical and sanitary matters, to advise and control the local Sanitary Commissioner, who will thus be the executive under his guidance and directions; and following up shortly the administrative detail to its higher branches, we would again put forward that the proper direction of sanitation in general, and the proper authority to afford the most reliable aid to Government, in administering the duties above laid down for the Sanitary Commission of India, would be that, in which the heads of the British and Indian medical departments had a guiding voice.

Any compromise from this involves increase of detail, and questions and replies from one department to the other; this is the case now, when information can only be obtained through the heads of the medical departments; there is thus a waste of power and experience, which no amount of talent gained in other branches of the services can compensate for.

That the present sanitary administration and executive is costly, is proved by the recent expressions of Sir R. Temple in his speech on the budget. The Home Government are reported at the present moment to be devising reduction in every branch of the army, from which the medical department will not escape. The *Lancet* notices the design in the following language, which, by a little verbal alteration, would be just applicable to the present state of the sanitary and medical administrations of India:—

"What can the Government want with a special adviser to the War Office drawing a large salary, when they have a wise army medical department with a Director-General in London at their disposal? If the War Office authorities can discover no one fit to advise them on sanitary and medical matters among the officers of the medical service, the sooner we cease to pay them and abolish the department itself the better."

SANITATION

from impurity. The cholera poison in water has been likened

nant with modern views on the subject.

NATIVE HOSPITAL AT HOWRAH

being available from the budget of 1868-69, the work must be

PAUCITY OF MEDICAL OFFICERS

present available for this class of Government servants. The

according to the rules of the service, is now complete. But it would not be complete if the regulated number of medical

out in these columns, during the past few years, and which

country to enjoy their well-earned furlough.

NATIVE MORTALITY

We hear from reliable authority, that, during the last three years, within a radius of 30 miles of the town of Hooghly, *one-third* at least of the entire native population have died out. This is the effect of the epidemic fever which is now

doctors have done all they could, and that—added to approved treatment—suitable and sufficient food has been given.

We incline to doubt this. With good nursing and appropriate treatment, the death rate from this scourge need not be so high. But we fear that, after all, treatment and nursing are like shutting the stable door when the horse has been stolen. Unless radical measures be taken, the epidemic will decimate the remnant of the population. But what are these measures to be? What can be done with acres of jungly land that have

with human filth, without surface drainage, and acted upon by

Abandon them. But for what? Where can the stricken population go to? We shall take this question up hereafter.

SUBORDINATE MEDICAL EDUCATION

We alluded, in our last issue, to Dr. Ewart's scheme for procuring medical "text-books" in the vernacular for the use of the "native doctor" classes in this presidency; and, in doing so, ventured to suggest an alteration, the nature of which we defined.

A mere translation of a work originally intended for people of totally different habits, containing unintelligible allusions, and in no way embodying the veins of thought which are characteristic

wrote, that this fact alone tends to render the book quite unsuitable for translation. Dr. Ewart says—"It would be necessary to have the text-books carefully revised, in order that theories and practices, which have fallen into desuetude, might be expunged from, and new discoveries and improvements be incorporated with, them." He instances the *spoliative* treatment advocated by Hooper and Bailey as one of those practices to be replaced by "concise directions for the *restorative* management of certain diseases." Not only so. The whole natural history of disease is changed, in a tropical climate; and, moreover, disease exists there which is almost unknown at home. We are at a loss to understand why this antiquated system of translating is again brought forward. We are, however, rejoiced to see that the local Government has paused before submitting such a system to the Government of India, when it is to cost, moreover, nearly £8,000 of precious money.

To some of the books we have no objection. Gray's Anatomy, for example, is an admirable work on anatomy, and might be translated, almost word for word. Strange to say, there is no work (extant) on this subject, of any value, translated into the vernacular.

We note that the committee have not recommended the translation of any work on chemistry or on medical jurisprudence. If they were under the impression that, because the "native doctor" classes do not attend lectures on these subjects, therefore text-books would be superfluous, they laboured under a serious misapprehension. The most urgent requirement of the day is a good vernacular treatise on forensic medicine, and on just so much of chemistry as is cognate with it. Indeed, we do not see why native doctors should not be instructed in a complete course of chemistry. As we have before pointed out, native doctors are often placed in independent charges where they must perform post-mortem examinations; and it is notorious that, at the present time, they are singularly ill-qualified to make them. It is a remarkable fact that the "native doctor" classes at the Medical College receive no systematic instruction, either in medical jurisprudence or in chemistry; and we wonder that the committee did not take the opportunity of drawing attention to this great defect in the college curriculum. It is one which has never been fully brought to the notice of the college authorities. They have, therefore, not realized the necessity of educating these classes to a standard higher than that of the mere drudge.

We venture to urge that Fowne's Chemistry—a text-book with the English classes—and an original treatise on medical jurisprudence, [illegible] Taylor's, modified [illegible] be translated into the vernacular. The committee have recommended a translation of Baboo Durga Doss Kur's book on Materia Medica. But we have now a better book on this subject—Waring's Indian Materia Medica. This and the British Pharmacopœia might be translated. The committee have recommended Druitt's Surgery. [illegible] work on surgery. The whole book need not be translated; and, to supply the place of the [illegible] of Dr. Fayrer's Clinical Surgery. Literal translations would be wide of the mark. A good deal of adaptation would be required in the surgical department of the series. Hence, in this subject we [illegible] We have now left physiology, midwifery, and botany. As the last is not at present essential, it might be omitted. With regard to physiology, we [illegible] pilation in English should first be made, and that this should subsequently be translated into the vernaculars.

Singularly enough, the important subject of midwifery has received but scant justice at the hands of Dr. Ewart. *The committee* do not notice it at all! A course of lectures for the Bengali classes at the colleges has recently been established; and it is a subject in which these classes take a deep interest.

Dr. Tyler Smith's work on obstetrics is set down as the best book on this subject for translation: but an original treatise would be far better.

The subjects, then, which, we urge, should be originally treated are *medicine*, *midwifery*, *medical jurisprudence*, and *surgery*. Then comes the question, who are to prepare the original works from which translations are to be made? Why should not each professor publish his own course of lectures, and submit it to the committee (the constitution of which we suggested in our last article), and who would, in fact, become, in a way, the *editors* of the whole, whilst they superintended the translations? We do not anticipate any difficulty with respect to the preparation of these lectures. The professors would probably have no objection to even publishing them at their own cost, provided that, by taking a sufficient number of copies, the Government would eventually reimburse them. There is little doubt that the Government would do this, as it has shewn great liberality in the case of professional works recently published by two of the college professors. This arrangement would remove whatever difficulty might be experienced in treating with the authors of the English works that had been selected for translation. Medical officers in India do not write so much with the object of gain as some of their confrères in England are compelled to do. There, they write for *reputation*, and the money which it brings, both in the form of increased practice, and in the actual *lares et penates*. Here, men *make* no more by writing than if they simply *lived* out their period of service, and avoided getting into trouble! This is one of the reasons why there are, comparatively speaking, so few Indian medical authors. At the same time there is no lack of the requisite ability, as is seen in the books which are occasionally sent into the world by an energetic few: and although there may not be the inducement to write that there is at home, there is no hesitation in a good cause.

Nor do we think that it would be necessary to offer any *douceur* to the members of the committee or to any single editor or supervisor that might be appointed, if they or he were in Government employ. Possibly, the best arrangement, after all, would be to entrust the editorship to a sigle individual, who should be eminent in his profession, skilled in teaching, and a good linguist. He would superintend the translations of the several works. This would be a most important and interesting part of the entire undertaking. If we may venture to give any opinion as to the mode of executing these translations, we would suggest that the following arrangement be adopted. Let each of the native teachers be deputed to make the translation of his own subject into the two languages, Hindustani and Bengali, with the assistance of a pundit. They might receive the amount mentioned by the Secretary to the "Calcutta School Book and Vernacular Literature Society," [illegible] out of which they would pay the pundit for his assistance.

[illegible]

thus vindicating the "European in India" from the charge of [illegible] him, and adding profitably to the world's medical literature.

2. Text-books of real value, which will bring credit to our [illegible] in India.

THE JAILS AND JAIL SYSTEM OF INDIA.

The first Jail Manual of the Punjab, published in 1858, contained rules which had been more or less in force since the [illegible] they were simply regulations for preventing "the mingling and mixing" together of all classes of prisoners. A recent manual, published in 1867, follows the classification laid down by the Committee of 1864; but while the principles are admitted, many causes have interfered with the practice being carried out in entirety.

"In Oude all the adult male prisoners have been divided into the four classes of the Jail Committee of 1864, and each class is distinguished by colored badges on their dress." In the Central Provinces, and British Burmah, beside the above four divisions, there is an additional classification, according to the nature of the crime.

The only classification female prisoners would appear to be under, is that of sex, and the Committee of 1836 record that from the [illegible] the most recent Bengal law [illegible] that the cells for females shall be in buildings entirely separate from those of males."

In the smaller prisons of Bengal Proper, there are few female convicts, and these are only confined for a very short term. For the last ten years, all long term female prisoners have been sent to the Russapugla Penitentiary, in the suburbs of Calcutta, which [illegible]

"The whole of the internal duties of this prison are performed by female convict warders, and the wife of the jailor acts as the matron of the establishment." Instruction of these prisoners [illegible] but other and more varied occupations are to be taught them. [illegible]

[illegible] appear to be [illegible] the [illegible] administrations; no man has access to a female ward at any time, except [illegible] and these latter are always superintended by authority; no visitors are allowed, and seclusion and separation must be enforced.

[illegible] was established at Lahore in 1863 for long term female prisoners. In the other provinces of the Bengal [illegible] for females, but in all the jails there is most distinct separation from male offenders. In Madras, there would also appear to be a penitentiary, and [illegible] the same system is carried out in Bombay.

The three penitentiaries above noted are in the centre of large populations, and therefore are ready for the reception [illegible] of offenders regularly in prison; but the provision of other such central prisons has not been thought necessary, for the reasons given by the Committee of 1864. They remark that the number of female prisoners throughout the Continent is small;* that their transport to and from their homes, under the charge of police, should be avoided, as rendering them liable to hardship and inconveniences which their sex need not be subject to; that any great change of climate should be avoided also. They therefore recommend improved and increased accommodation for females in the large jails; that they should always be sent to the largest jail nearest the place of their committal; that the accommodation for them should be improved and increased; that their wards should be as far removed as possible from the [illegible] and that a suitable [illegible] should always be made for them in their own portion of the enclosure.

The English Prison Act of 1865 orders that every prisoner is to be kept in a separate cell by day and night; thus rendering classification unnecessary. "In India more elaborate classification is necessary," and we have seen that in "all the provinces, the separation of males from females, juveniles from adults, tried from untried prisoners, is the rule," besides other sub-divisions noted; and the subject may be concluded in the words of the note: "On the whole, it will perhaps be admitted that the proper principles of complete classification are fully recognized in this country, and are carried out wherever central jails are completed. In the smaller jails, owing to structural defects, the rules are in advance of the system; but even in these jails there is no association between those classes which by universal consent should [illegible]

6. *Discipline and General Management.*—The treatment of prisoners under trial corresponds with that laid down for the same class under the English Prisons' Act, 1865, and is thus described: "The object of preliminary imprisonment being simply that the accused shall be forthcoming at the day of trial, all reasonable indulgences compatible with this object, and with prison discipline generally, are allowed to this class. They are permitted to wear their own clothes, to cook for themselves, and to communicate with their legal adviser; fetters are only imposed in the case of desperate characters, and when

* [illegible] all India:—

Year.	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

absolutely necessary for security. No labor of any kind is exacted from them, but a rigid attention to cleanliness is insisted upon." Prisoners under sentence form the greatest bulk of the jail population; their discipline has been conducted on various principles for many years past, and still remains unreduced to any settled system. The primary object of imprisonment is punitive, that it should be a punishment; the secondary is that it should be reformatory; and the third that a prisoner should by his labor contribute something to the expenses incurred by the state for him; but it is one of the great problems of the day how to make punishment punitive and reformatory, and yet to make the convict pay something for his keep. If you make him acquire an interest in his work and allow him to earn too much, you destroy the effect of punishment, and enable him after his release to compete with, and perhaps eclipse, honest workmen who have never had the fortune to be as skilfully taught; and on the other hand, if you do not make the most of his labor, shown by increased annual profit, your management of the jail will not be considered as productive as others compared with it, and is liable to be called in question. The first experiment of making prison labour remunerative would appear to have taken place at the model prison at Pentonville in 1842 in connection with the separate system. Each prisoner was invited to pursue his former trade, or to learn a new one in his own cell; and from the second report of the commissioner in 1844, we learn that profits effected by sale of the products of labour were very large, although "care is taken that the regular manufacturer is not undersold, the prices upon the goods being fixed at the regular market value of similar articles."

The Indian Jail Committee of 1836 "did indeed look to a reduction of the cost of imprisonment, not from remunerative labor, but by adding so much to the severity of the sentence, as to render a shorter term of imprisonment under the then system a punishment equivalent to a longer term under the old system."

The committee of 1864 desired to introduce such discipline into jails as "to make imprisonment a really deterrent punishment." They lay down that "labor is the principal means of enforcing discipline; from it alone is derived the possibility of insisting upon order, punctuality, and that clockwork distribution of time which is so burdensome to the lawless and irregular."

They point out that stringently imposed labour is peculiarly repugnant to men of the convict class, but, says the note, "Setting aside the question of the propriety of the state entering into an advantageous competition with free labor, it may be remarked that to insist so much upon the *remunerative* results of prison discipline is quite opposed to the recommendation of the committee of 1836, and to the English prison system as laid down in the Prisons' Act of 1865."

The note then details the system in all the provinces in India, and concludes—"It would seem that in all the Presidencies, and especially in Bengal, the remunerative theory of prison labour prevails to an extent which makes it very doubtful whether the primary object of the sentence—punishment—is steadily and systematically kept before the prisoner." Since the publication of the paper, the Government of India has noted that as the last annual jail reports (of 1867), especially from Bengal Proper and the Central Provinces, show a tendency to make prison labour so remunerative as to interfere with punishment, local Governments and administrations have been desired to introduce into their jails those particular forms of labor which, while they add much to the severity of the sentence, do, as a matter of fact, contribute also to meet the cost of the prisoner's maintenance.

In Great Britain "it does not appear that any prisoner is remunerative. The net annual cost to the state per prisoner seems to vary from £14 to £69."

The jail codes of the several provinces, acting on the principles laid down by the committee of 1864, divide labor under three classes. 1st hard, 2nd medium, and 3rd light; "the allotment of each prisoner to a class being left to the determination of the medical officer, according to the prisoner's physical capacity." These classes approach nearly to the second form of hard labor contemplated by the English Prison Act, and the first form, which consists of treadwheel, crank, &c., is wisely omitted for the less powerful frames and system of the Indian convict.

We will now note the reformatory agents employed, that is, agents to act as an incentive to good behaviour, in all the provinces of India.

"In Bengal the only rewards open to the prisoners are (1) employment in subordinate offices of the jail as work overseers, convict warders, and convict guards; and (2) the grant of intermediate imprisonment. These rewards are open to all classes of convicts, and are accorded for continued good conduct in prison, but no convict is eligible for the former until the expiry of the prescribed term of labor of the first class, or for the latter until he has completed the prescribed periods of first and second class labor, and has discharged, without fault, the duties of convict overseer, warder, or guard.

The indulgence of "intermediate imprisonment" was founded apparently on Sir W. Crofton's system in Ireland, and is stated to be very highly prized; it was allowed in 18 cases in 1867, against 9 in 1866, and 6 in 1865."

(To be continued).

NATIVE BENEFICENCE.

We are glad to hear that Baboo Doorga Churn Laha, of Calcutta, has made over to Government £5,000, yielding Rs. 3,000 per annum, for the foundation of scholarships, to be awarded on the result of the University examinations, and for certain stipendiary studentships in the Government colleges and schools in Calcutta and Hooghly. Amongst others, we observe a *medical scholarship* for a student who has passed the first B.M. examination, and is preparing for the second examination, tenable for two years; and to be awarded every alternate year Rs. 30.

Whilst we congratulate the promoters of native medical [illegible] in India on this bequest, we confess to experiencing great disappointment that so much should have been given to other subjects, and so little,—one-hundredth only of the whole sum,—to medicine. Wealthy native gentlemen cannot do more good with their wealth than in encouraging the youth of the country to cultivate the study of a subject which tends more than any other to [illegible]

Local Correspondence.

...

...most strictly examined by the professors of the college, both ... the dissecting room. Our examination in Bombay, Mr. Editor, is as stiff as it can be, and it cannot be stiffer.

If the change which has now taken place for Bengal were to extend to our Presidency,—we wish that it may do so,—we ... object of making the change in the mode of examination is to enable the sub-assistant surgeon to give his examination at his very station, that is, at the place where he may be located, and thus to avoid the necessity of his going to another station, or to the presidency town. Now, the sub-assistant surgeon's station may be such that there may be no fit persons to form ...

Besides this, there is another objection, which I hesitate to mention. For these reasons, the examination may be conducted ... *viva voce* examination, the written questions may be forwarded in greater number, or they may be made of a more searching nature. I request, Mr. Editor, that you will use the influence of your powerful pen towards furthering the above suggestion.

But there is another subject. In the same editorial, you seem to suppose that the title of the *sub-assistant surgeon* is distasteful to us, and kindly suggest that, if we wished, we may ... that the title of sub-assistant surgeon is the very best for all ... distinctly separates us from the members of the subordinate medical service. Moreover, the unprofessional people, too, comprehend this word very correctly. Quite the reverse with the title "native surgeon," which may turn out to be as confounding and meaningless as the word "native doctor," which, alas! had ... dropped. So we would, by all means, retain the title of sub-assistant surgeon, and would respectfully protest against any ... but it will never satisfy us, the Bombayites. We do not object ... officers in other departments holding highest situations of trust under Government. What we most seriously complain about, and deplore, is our miserable pay, our present fallen position, relatively with the other servants of Government of similar standing, and the poor or unsatisfactory nature of our charges. ... we are smothered in an amount of indifference which, in the eyes of all just thinkers, is utterly unpardonable. More about ...

Yours, &c.,

A ...

9th March, 1869.

...

...your kind consideration:—

...stewardship being abolished, your petitioner has been reverted to the grade of assistant apothecary, on a salary of Rs. 100, and all hope of promotion stopped, until those stewards who will have become supernumerary of the required number of apothecaries ...

Your humble petitioner would, therefore, beg your kindly recommending and forwarding this petition through the proper channel to his Excellency the Viceroy and Governor-General, with the view that Government may sanction the transposition of the names of all passed assistant apothecaries in regular rotation to the top of the list for promotion, and as a privilege the seconding of all subordinates in civil employ, and thereby filling up of vacancies in the late grade of hospital steward prior to the 27th of May, 1868, from which date the above G.G.O. No. 550 takes effect.

Your humble petitioner would be promoted to the grade of hospital steward, and under G. G. O. No. 550 allowed the privilege of electing for the grade of apothecary, or retiring from the service, and your petitioner, as in duty bound, &c.

A B.

...

...

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

DEAR SIR,—A week or two since I received a copy of Messrs. Wyman and Co.'s "yellow pamphlet," and on looking it over, a small piece of injustice struck me as having been perpetrated in the recent civil medical arrangements, which has, as far as I know, passed unnoticed hitherto.

It is this, that while every other hill station in the west of the Bengal Presidency has been placed under the two years' tenure of office rule, that of Darjeeling, in Bengal, has been allowed to remain as a permanent charge. Why, no one that I have asked about it can tell. It is obviously so unjust to the incumbents of the other six hill stations (some of them far inferior to Darjeeling) that they should be turned out, and the civil surgeon there allowed to retain the appointment permanently, that, I feel sure, the matter has only to be brought to the notice of the Viceroy by the Inspector-General, to have the mistake rectified.

The prizes in the medical service are so few, that it is every unfair to the whole service to allow one of the best in it to be monopolized by one man for the whole of his service. Let the present incumbent by all means have two years from the date of the order classifying the civil stations in Bengal; but let him then make way and allow others a chance of breathing a little fresh air as well as making a little money. That I have no personal object in writing about this, you will be satisfied ...

Hoping that you will give this letter a place in your columns, and also lend the matter your support.

Yours, &c.,

PRO BONO PUBLICO.

P.S.—I would suggest that, should the Viceroy refuse to recognize the justice of the matter, the whole of the members of the medical service should petition* the Secretary of State, or use their influence to have the matter brought before Parliament.

* ...

ORIGINAL COMMUNICATIONS.

SELECTIONS FROM OPHTHALMIC PRACTICE.

BY J. B. SCRIVEN,

Principal, Lahore Medical School.

AMONG the numerous cases of eye disease that present themselves at the Medical school hospital, it appears to me that a few are of sufficient interest to deserve a more public record than that of the hospital case book.

I have therefore selected, for the present communication, the following three cases of opacity of the cornea, relieved by iridesis.

This operation was devised by Mr. Critchett, more especially for those cases of central congenital cataract, in which great benefit was derived from dilatation of the pupil with atropine. It consists in making a puncture, with a broad needle, in the sclerotic, just outside the margin of the cornea, introducing either a hook or forceps through a circle of fine silk, previously laid on the conjunctiva, drawing out the pupillary margin of the iris, and tying the silk tightly round it. The silk is prepared thus for tying in a half knot, and drawn tight upon the iris by an assistant, with two pairs of ciliary forceps. The result is a displaced pupil, tapering towards the ligature, where it terminates in a point. Such a pupil retains the orbicular fibres of the natural pupillary margin, so that, on exposure to light, it contracts, not indeed uniformly, but towards the fixed point. The advantage of thus retaining the natural pupil, instead of forming an artificial one, is considerable. An artificial pupil, in which the sphincter muscle does not exist, remains of one uniform size, in all variations of the light, so that, if large enough for a subdued light, the patient is dazzled in a bright one, and *vice versâ*. A pupil displaced by iridesis, in affording an adaptation to the light, by its contraction and dilatation, is but little inferior to the natural pupil; and, independently of this, by retaining its concert with the ciliary muscle, in the accommodative action of the latter, contributes greatly to the excellence of vision.

CASE I.

Mirzea, admitted March 12th, 1868, aged 40: (Hospital Register XI, p. 42). Right eye blind, bare perception of light remaining. On the left eye there was a leucoma of circular form, extending from the inner margin of the cornea to a little beyond its centre, thus leaving a crescent-shaped portion clear on the outer side. The man could not find his way about, nor recognise his friends. Vision was not altered by a dull or bright light. The small amount of vision that remained was for objects at his left side, in which situation he could count the fingers. After the application of atropine the pupil became well dilated, round, and regular, and he could count the fingers in front of the eye. Iridesis was performed, under chloroform, producing a conical pupil, extending downwards and outwards opposite the clear crescent-shaped part of the cornea. This man was discharged on the 10th of April, on which day I find the following notes: "Can recognise people now, and can distinguish even their features, eyes, nose, mouth, &c. His sight is somewhat dazzled by a strong light; he is obliged to bring objects near, in order to see them.

"A carpenter and says that he has got vision sufficient for his work."

CASE II.

Ameer, a Mahomedan male, aged 20, admitted May 17th, 1868. (Hospital Register XII, p. 49)

In the right eye there was found a small nebula, in the centre of the cornea, but a good active pupil behind, and fair vision for near objects.

In the left eye there was leucoma and synechia posterior. With this eye he could count the fingers, and make out the shape of the letters of No. 8½ Snellen. The vision of this left eye was improved by the instillation of atropine, which broke down the synechia, and dilated the pupil evenly and well.

On the 21st iridesis was performed in the left eye, on the outer side, under chloroform. The result was a conical pupil, opposite the clear part of the cornea, with its angle at the puncture. By this the man's vision was much improved, and he was discharged on June 25th. I regret that the improvement was not accurately ascertained by the test types.

In this case, the pupil being widely dilated with atropine, it was found rather difficult to catch the pupillary margin with the canula forceps so near the puncture: the operation, nevertheless, succeeded very well, but the practical lesson was not to operate again on an eye under the influence of atropine.

CASE III.

Ghaseeta, aged 35; (Hospital Register XII, p. 172). A Mahomedan male, admitted November 25th, 1868. This man was practically blind. There was leucoma of both eyes. The opacity on both sides was thick and circular, about the size of a split pea: that of the left eye was at the lower part of the cornea, of the right at the lower and outer part. In a subdued light he could count the fingers with the left eye, but not with the right.

After the instillation of atropine, he could count the fingers in the shade, and even in a strong light, with both eyes, and could see persons standing before him, but could not distinguish their features. The margin of the pupil, which previously, in a strong light, was covered by the leucoma on both sides, now became visible on the left side just above the leucoma, and on the right side at its upper and inner margin. By oblique illumination it was discovered that the lower half of the left iris was adherent to the leucoma and immoveable, but the upper half free. There was no synechia in the right eye, the pupil being round and active.

Iridesis was performed on the right eye, on November 29th, the pupil being drawn downwards and inwards, opposite the clear portion of cornea.

On the 14th of December, an artificial pupil was made, opposite the clear inner part of the cornea, in the left eye, a bit of iris being seized with the iris forceps and cut off. The result is shown in the accompanying sketch.



O. Opacity.
P. Pupil, displaced in right eye, artificial in left.
L. Point of ligature of the iris.

Right eye. Left eye.

I had considerable difficulty in trying this man with the test types. He could not read, and lacked either the will or the intelligence to define carefully the shape of Snellen's figures. He could see all the objects around him, however, and distinguish many of their details. He recognised a tree, seen through the window, as a peepul. The right eye, with the displaced pupil, was decidedly the best, although there had been more vision in the left before the operations. With the right eye he could make out certain figures, which were drawn for him, ½ inch in diameter, at three inches distance; he could do the same with the left eye, though less perfectly; at four feet distance made out No. 50 Snellen, though not very accurately.

The reason of my operating on this man's left eye by iridotomy, when iridesis had succeeded so well in the other, was that, in the left, the iris was partially adherent; a free pupillary margin is essential to the success of iridesis.

In the three foregoing cases I used the sounds forceps to draw out the ova as it is much more certain than the hook.

In the operation, as found given for the retrocervical tumour, a mere draw may cause extensive rent, the posterior lip being everted. Almost no bleeding need be feared, and the hæmorrhage comes away at most in a couple of days. Observations is absolutely necessary to ensure the complete quiescence of the patient. Manual replacement of uterus on abdominal wall, pupil by attendant, must be taken advantage of the opportunity whether in congenital retained, or in cases of the ovaria.

Lucknow, January 28th, 1869.

REMITTENT AND CONTINUED FEVERS

By T. FARQUHAR, Esq., M.D.

I refer the reader to two classes of fevers, which in [illegible] by the continued fevers are made to resemble all the forms of fever (except intermittents) to which the army and prisoners are subject in India.

The general difference between the symptoms of the three fevers are well expressed by their names, and the belief has been generally entertained that they are all of malarious origin, and of a non-contagious character. This idea is strongly supported by the observation that treatment at times, which is certainly guided by [illegible] sometimes appear to pass into fevers identical in their symptoms with remittent and continued fevers; and again that, during convalescence from these severe forms, symptoms of ague will shew themselves.

These fevers, too, are more or less curable by quinine, the [illegible] and at the same time indicative, of malarious types of fever.

Dr. Bryden's valuable tables for the last four years, however, give us data on which to found an opinion that these fevers [illegible] an opposite form. They either then assume the characteristics of a specific form of fever, or, under the cloak of the names of remittent or continued fevers, another distinct type of disease is developed.

That a specific fever of a mild type does frequently occur is more than probable from the observation that severe fevers are most abundant at those seasons of the year when, from the comparative absence of intermittents, we know that marsh [illegible] most abundant.

In [illegible] and epidemic cholera, this specific fever chooses a particular season of the year, (usually the hot or beginning of the rains,) at which time it is most freely developed. Like these, too, it lasts in an epidemic form for only three or four months at a time, though exceptions to this rule are not unfrequent. Again, one regiment or body of men at a station is seen to suffer, while the rest have comparatively very few [illegible].

Sometimes, again, the disease seems to stick to particular corps [illegible] a regiment frequently carries the fever apparently from one station to another, or an unaffected regiment will pick the fever up at a station where it prevailed immediately before their arrival.

An instance of the former was seen in H. M.'s 55th Foot, which [illegible] and 104 cases at Dum-Dum in 1866, just after that station had [illegible].

Another observation in regard to these fevers is interesting, [illegible] that the general [illegible] the hot season, [illegible] that heat favors the development, and certainly intensifies attacks [illegible].

[illegible] must be excluded from deriving the advantages [illegible] during which they reach their acme. Thus, [illegible] twenty observations, the number of admissions reached its height [illegible] October, then [illegible] in September, and [illegible] April and July. These points, again, [illegible] severely in a station during one year, and lightly the next.

The most [illegible] of practical importance in regard to this fever is the relative numbers of admissions into hospital from among the different bodies of men under review.

They stand thus:—

	Per cent.
Europeans	[illegible] 10·17
Prisoners	2·[illegible] 3·42
Native soldiers	519 or 1·33

This remarkable difference between the sufferings of these men is not confined to the year 1867, but is seen to occur in much the same proportion during all former years of which we have record. It is the more remarkable as we see the same classes of men suffering in the very opposite ratio from strictly malarious fevers.

The cause of this remarkable difference must be sought for most probably in the modes of life of the classes referred to. The susceptibility of the European to the effects of extreme heat must not be overlooked, but that something else must be blamed is concluded from the fact, *first*, that we see this form of fever among Europeans living in cool hill stations as well as in the plains, and in the comparatively cool months of October as well as in May; and, *second*, from the very large proportion between native prisoners and sepoys who suffer attacks.

The differences in habits of the three classes are seen principally in this, that Europeans and prisoners live always in barracks, and use common latrines. The latter of these have been conclusively shewn in England to be a dangerous element in the propagation of typhus and typhoid fevers, and others probably resembling the one we are now noticing. The sepoys, on the other hand, live only partially in barracks, and these commonly very open: besides this, at the season when this fever prevails, most of the men usually sleep outside. The sepoys, again, can with difficulty be got to frequent the public latrines, which are provided for them at a few of the larger stations.

There is in addition a great amount of segregation in the case of sepoys. This is independent of military regulation, but dependent on their habits and caste prejudices, often more [illegible] than any [illegible] laws. Instances of this need not be enumerated, but on examination they tend to explain the immunity such men have always had from contagious diseases.

The system of herding men together in large barrack rooms must, from the data afforded by this fever, be condemned as [illegible] ed-for effect of moving Europeans into camp during epidemics of cholera. It was found that the exposure in tents was not followed by the bad effects anticipated. On the contrary, the fevers of the hot season were greatly diminished in numbers from the change into camp, and the sanitary effect of abundance of fresh air and the return to clean barracks.

Another subject of deep interest is an examination of the death-rate during 1867 from these fevers. This reveals the fact that the ratio of deaths to admissions among Europeans was far less than among either prisoners or sepoys.

	Per centage of deaths to admissions.
Europeans	1·88
Native Soldiers	7·71
[illegible]	7·7

showing that, in the last year, the Europeans died at the rate of only one-seventh of the other two classes.

The records of the three previous years shew how this immunity from death is no new feature in regard to Europeans :—

		Died per cent. of admissions.
1864.	Europeans	2·16
	Native Soldiers	7·89
	Prisoners	13·26
1865.	Europeans	1·86
	Native Soldiers	8·88
	Prisoners	14·56
1866.	Europeans	1·97
	Native Soldiers	6·48
	Prisoners	13·83

The first explanation that naturally occurs of this is, that the European is probably more carefully nursed in his attacks of bad fevers than either the sepoy or the prisoner, as also that his more stimulating food enables him more effectually to resist their attacks.

A reference, however, to the preceding years shews that this will not account for the whole of the difference in the mortality. We see that in the jails a continuous high rate of mortality prevailed for three years, 1864-65-66, but fell to one-half in 1867. We are told in a note to Dr. Bryden's tables, that what he calls "Jail fever" prevailed in a number of the jails, especially up-country, and to this he attributes the high rate of mortality.

This so-called jail fever, however, passed as a scourge over the upper provinces among the village population; it had only then to be introduced into the barrack of a prison to find a ready means of extending its deadly influence.

The heavy mortality of the sepoys may probably be put down to this fever also, for, from mingling freely with the population, they would readily catch it; as to Europeans, from their mingling so little, they are necessarily cut off to a great extent from contagion, and thereby escape.

Other fevers, as the spotted typhoid and typhus, have shewn themselves lately in India, and are a formidable addition in the classes of disease to be combated.

The mortality from the present fevers among Europeans speaks of the mildest type being as yet in their ranks. Even the mortality in prisons in this last year is less than the death-rate of fevers prevailing in England,* but we have the ratios doubtless lessened by the presence in jails of milder types, including the purely malarious.

The conclusion from the above is, that those continued and remittent fevers which during the last decade have sent 122,019 Europeans into hospital, are very serious evils, the prevention of which demands the most serious attention.

Admissions from remittent and continued fevers in the following years :—	
1858	31,829
1859	25,316
1860	17,138
1861	12,[illegible]
1862 ...	9,[illegible]
1863	5,[illegible]
1864	4,448
1865	5,[illegible]
1866	4,312
1867	3,618
	122,019

At the same time we rejoice to see from the table in the margin, that the general measures adopted during the decade for the housing and improving the condition of the soldier have worked an increasing change for the better in regard to these fevers; especially is it observable that this last year has had the fewest number of admissions.

From the first half of the decade we see how much the privation and exposure in the field, and in bad barracks, of the large newly-arrived English army, ignorant of the country and unacclimatised, caused attack of severe fevers. The gradual diminution, too, of the British force in the country, and the consequent increased accommodation, must be considered when we account for the reduced amount of "pernicious" fevers; a like result followed the reduction of the French troops in Algeria.

The percentage of deaths to admissions from remittent and continued fevers is seen in the table in the margin; it has varied little, but has been higher for the last four years than in the four preceding.

1858 ...	2·15
1859 ...	1·23
1860	1·21
1861	1·18
1862	1·27
1863	1·46
1864	1·97
1865	1·86
1866	1·97
1867	1·84

We learn from all this the necessity for having good barracks, and the value of peace; we see also how many bad fevers must be the result of extremes of heat, and the necessity there is of keeping the soldiers as cool as possible in their barracks. The question now is whether the very large barrack rooms are the best arrangement for enabling us to keep the temperature in them down to a reasonable degree. The answer to this is, without doubt, that it is far more difficult to cool down, and keep cool, a body of air 36,000 feet in extent, than one of 7,200 feet; the former is the total of the latest built barrack room for 20 men, the other would be this room subdivided to hold four in each division. The smaller rooms would certainly be kept the coolest by the means at present employed, the *tattie*, and would also enable doors to be more closed and kept so, for the doors of large barrack open at all hours allows the building to get thoroughly heated, and thus the soldier lives in a high temperature to which his officer is not exposed.

2nd. On looking over the list of fevers in every month, we see remittent and continued fevers mentioned in each; now we know that some, if not most of these fevers, are exaggerated cases of intermittents. Here we have miasm to deal with, and know that sub-soil drainage is our best hope of freeing the men of this influence.

3rd. Specific fevers, mild and severe, are no doubt in and around our barracks; *segregation* is no doubt our chief means of avoiding these. When they do enter a barrack, the same means on a small scale as are employed in epidemic cholera, are called for here. We have seen the success of moving into camp, unattended by the privation of a campaign. Minor means should, however, be first tried to free the barracks of the contagion before the dispersion of camp life is enforced. Much could doubtless be done by turning the men into tents* for the night, on the parade-ground or a short distance from the barracks, and having these and the spare clothes of the men fumigated with sulphur fumes, while the linen, wood work, and the walls are washed and whitened. The latrines should also be thoroughly cleansed and fumigated in the same way, and kept under the influence of the fumes while traces of specific fever existed.

A revised and more distinguishing nomenclature of fevers in the medical returns would give a far more correct idea of the nature of the diseases that have to be dealt with, and the means required for their relief. As an instance of this we [illegible]

		Percentage of death from fevers.
* St. Thomas, London	... ...	1·00
St. Georges, London	...	11·3
King's College	... ...	18·29
Newcastle	... ...	11·54
Nottingham	... ...	12·78
Birmingham	... ...	14·05
Bristol	... ...	9·47
Edinburgh	...	11·61
Glasgow	... ...	11·56
Aberdeen	... ...	9·27

* I saw this tried in an out-break of fever in the Lahore [illegible] while in tents, the men continued to suffer from the [illegible] because they were huddled very close together. The [illegible] barracks seemed, however, to stop the fever at once in the [illegible] prisoner after a few days' absence from the jail.

NOTE ON EMBELIA RIBES AS A REMEDY FOR TAPE-WORM.

BY [illegible], M.D.,
[illegible].

[illegible] it in his recently-published pharmacopœia of India. Dr. [illegible] native physicians as a vermifuge cathartic. Sir W. Ainslie does not allude to it in his Materia Indica, and Dr. Lindley (Vegetable Kingdom) merely notes that a slight degree of pungency [illegible].

Baubirung is procurable in most Indian bazaars, and, as stated [illegible] as ounce of the powder. In the directions which I received, the [illegible] or old "dhye;" and, it is added, "the patient can either take it [illegible] after mixing the two together, or eat the powder and wash it [illegible] expulsive form of the two." Both modes seem to be so disgust-

I have yet tried it, and I have tried it in some in which kamela kousso, oil of turpentine, pomegranate root bark, and, I think,

ON THE BITE OF THE SEA-SNAKE.

By [illegible], M.D.,
Madras Medical Staff.

[illegible] far as tide-water ascends. Their bite has proved fatal in every case that has come under my observation, and that, too, in a very short period after the wound was inflicted. The Burmese, however, tell me that persons do sometimes recover, and that [illegible] season."

[illegible] and waded out several times to observe upon the captures, and [illegible] within the nets attached to the fishing stakes—where I saw the venomous sea-snake, the Enhydrina Bengaliensi Gray was exceedingly numerous,—as they asserted that their bite was deadly, and only a short time previously two fishermen, who had been bitten, had succumbed in two hours. The symptoms were [illegible] circulation: death within two hours.

I little thought that I should shortly be subject to a personal [illegible] stockings, I saw the usual number of these animals about. Whilst returning towards the shore, I felt my left heel pricked by something, and lifting it up, one of these reptiles was hanging [illegible] by two drops of blood, distinctly proving that the fangs had [illegible]

I had no remedies, was ten miles from any drugs, and the [illegible] strongly as possible, the rubbing the place with brandy, and [illegible] results. May not this specimen have discharged its venom on the net, and so had none left for use, or as I began, are there [illegible]

A SUCCESSFUL CASE OF VENOMOUS SNAKE BITE.

By [illegible],
[illegible].

As the pathology and treatment of venomous snake-bite are [illegible] occurred here may be worth publication:—

[illegible]

suffering from all the symptoms of severe shock, and the neighbourhood of the bite was red and swollen. A ligature was immediately tied around the right leg, and a good dose of brandy and sal volatile administered. As soon as he had somewhat recovered from the shock, the track of the snake-bite, and the skin and muscles, &c., encircling it to the extent of a quarter of an inch, were carefully dissected out. Strong nitric acid was then well applied to the wound, which was afterwards covered with a linseed meal poultice, to be renewed every three hours. When all this had been done, the ligature around the leg was removed. Ten minimms of liquor ammoniæ were ordered to be given every three hours.

After the first twenty-four hours, he had completely recovered from the shock. He then, however, began to pass blood in very large quantities from the genitals, gums, stomach, bowels, and kidneys. To relieve this, twelve minimms of tincture of the sesquichloride of iron were given every two hours, with occasional doses of brandy, well diluted, as his pulse was sinking. A very decided impression was made in the hæmorrhage after the first four or five doses of the *tincture of the sesquichloride of iron*. On the second day of its administration, the blood was confined to the urine, and on the fourth day, it had ceased altogether. He was discharged on the 20th December, but continued as out-patient for weeks afterwards, as he had become quite anæmic, owing to the great loss of blood he had suffered.

THE PEKING HOSPITAL.

BY R. HARVEY, ESQ., M.B.,
Civil Surgeon, Heartpore.

Allusion to the remarks on medical missionaries in the last issue of the *Gazette*, and to the recent debate on China Missions brought on in the House of Lords by the Duke of Somerset, a brief sketch of the operations of the Peking Hospital, in connection with the London Missionary Society, may be interesting to our readers.

The Hospital—the object of which "is to alleviate suffering by curing disease, to gain the affections and confidence of the people, and to prepare the way for the more extended introduction of Christianity and Western Science"—was established in 1861 by Mr. Lockhart, Surgeon to Her Britannic Majesty's Legation, and has been carried on since the beginning of 1864 by Dr. Dudgeon, the present Physician to the Embassy, whose reports for 1864, '65, '66, and '67 are now before us.

Situated at first in the legation buildings, it speedily became popular in spite of the suspicions of the authorities; but the original premises being required to accommodate the increasing staff of the Embassy, a temple in one of the leading thoroughfares of the Tartar or Northern City was engaged and fitted up in 1865. The consequence of this removal to a better site in a more populous quarter has been a great increase in the attendance—the number of new patients having risen from 3,007 in 1864, to 8,066 in 1866, and 5,722 in nine months of 1867.

The diseases treated, as shewn in the tabular statements appended to the reports, [illegible] the "normal natural shocks that flesh is heir to." The ophthalmic practice [illegible] *specialité*. The frequent dust-storms, the dirty habits and [illegible] cure of entropium and cataract have been both numerous and successful, and seem to have produced a very favourable im-

[illegible]

and ill-ventilated houses, and the total absence of all sanitary measures are considered. It may, in part, be due to the peculiar susceptibility of small-pox said to exist in the dark-skinned races, but we are inclined to believe that this statement has been received on too little authority, and is one of those hasty generalizations which will crumble to pieces when properly examined by the light of reliable statistics.

Vaccination was introduced into China in 1805, by Mr. Pearson, a surgeon in the H. E. I. Company's service, and has been partially taken up by the natives, its advantages being readily admitted. In Peking itself, it was first practised on a small scale by the Russians, but in 1828, the Prefect Tseng had a tract published, stating its object and the benefits which it conferred, and three vaccine establishments were opened by the Government. These still exist, and appear to be well-conducted. Attendance is given every eighth day, the operations being done from arm to arm with fresh lymph, and a donation of from two pence to nine pence is given on the second visit, as an inducement to the people to attend and thus perpetuate the lymph supply. At the principal station in 1863, 6,080 vesicles were produced from 7,374 insertions of lymph—a fair success in native hands. The apathy and fatalism of the Chinese causes a very general neglect of the use of the prophylactic, and Dr. Dudgeon calculates that not more than from four to eight per cent. of the children annually born are ever vaccinated. The ravages of small-pox are therefore little mitigated, and it is rare to see an adult chinaman who is not marked with the characteristic pitting. The discovery of vaccination is ascribed to the western barbarian Chan-na (Jenner). Believing that the poison of small-pox resides somewhere near the insertion of the deltoid muscle, minute directions and diagrams are given to show how the counteracting lymph is to be applied. The diet is strictly regulated. "The smells of whiskey, opium, heated kangs (sleeping places) and dirty or decaying matter" are to be religiously eschewed. "For at least 100 days after vaccination, cocks, certain kinds of fish, beef, eggs, beans and bean-flowers are to be avoided. For three years after vaccination, buck-wheat and cherries are to be shunned, the things enjoined are vegetables, pork, and salted ham. Three days after vaccination they are allowed to eat shrimps with rice, spirit, mongolian mushrooms, and mutton; and only in winter must birds's nests, steamed with sugar-candy, be eaten. The vaccinator at the principal establishment was presented with a crystal button from the Board of Revenue." Happy vaccinator.

Inoculation has been practised in China since the time of the Tung Dynasty, or for 800 years, and there can be little doubt that it was carried across the plateau of Central Asia to Turkey by herds of nomadic Tartars. Not more than one per cent. die of the inoculated disease.

Fevers, especially intermittent, are of rare occurrence. Rheumatism and neuralgia, with coughs and colds, are very common, as might be predicated from the extremes of temperature of the Peking climate. Skin diseases are rife, and are kept up and intensified by the crowds of beggars who, in the winter, huddle together for warmth. They are thought little of, and indeed seem to be rather valued as a means of exciting compassion and extracting alms, and the beggars often refuse to submit to treatment from a fear of losing their small chance of a livelihood. Dyspepsia is the most common of all the *medical* diseases. It is to be ascribed to the sedentary habits, peculiar local customs, and unsuitable dietary of the chinese. The popular food seems to be principally "raw and pickled vegetables, unripe fruit, insufficiently and badly-cooked meat, sauces, condiments and sweetmeats, excessive use of tea and warm water—cold water is unknown as a beverage—and immoderate use of alcoholic liquors, opium and tobacco." The use of warm instead of cold water as a drink is considered advantageous, the people being careless as to the source of their supplies. To this peculiarity

ulcers, tumours, and other surgical diseases are very common. Many of the latter have been excised, some of them of large

the principles and practise of Chinese doctors. These, even

of anatomy; worse than nothing of physiology and pathology; have no idea of operative surgery—cannot even open an abcess

tised in almost all diseases, and with a fool-hardy recklessness

Dr. Dudgeon seems to have estimated the evil effects of the habit at much less than they are usually assumed to be. "The opium smoking will bear a favourable comparison with the drinking customs at home. It does not produce the intoxication of ardent spirits. The opium smoker is not such a nuisance to the community and his family." In his last report, however—that for 1867—he says, "It (opium smoking) still continues

temporal," doubtless, confirmed opium smokers are not the best subjects for progress. They are naturally apt in present enjoyment to sit like the lotus-eaters "on the hills like gods together

cases and remarks, any evidence of that universal misery and depravity, often said to be the invariable consequence of opium eating or smoking. The people who apply to him to be cured of the habit, seem to be poor devils, who have no longer the

come to hospital in the hope of getting something in the shape of a stimulant to relieve the craving caused by the sudden suspension of an indulgence which use has made second nature. Most of them relapse so soon as they can procure the necessary

says Dr. Dudgeon, "who have the means, ever *desire* to give it up." That opium in excess will produce all the evils charged against it, we willingly admit, but we are by no means convinced that taken in moderation it is *always* injurious, or

to merge in excess than the habit of moderate indulgence in

eaters both in England and India, and believe that nearly as much exaggeration has been used by the enemies of opium, judging from the exceptionally bad cases which of course chiefly attract their attention, as has been used against alcohol by zealous teetotalers alarmed by the always present evils of drunkenness, or against smoking by fanatical members of the anti-tobacco society, on all but imaginary data. Opium is a

the evidence of these reports, the bad effects of the former do

ness does, either directly or indirectly, into English Hospitals.

• • • no inflammation ensued, and a speedy and successful cure was the result.

We might go on to extract largely from these very interesting reports, but space forbids. Independent of their professional, they have a peculiar interest in their attendant circumstances. They shew us western civilization arrayed against celestial barbarism; western science disputing the effete dicta of the schools of Chinese philosophy; modern western medicine supplanting the pathology and practise of Ho and Hwang; and

a worn-out idolatry. There is something of sublimity in the idea of a single English surgeon, by the mere practise of his art,

abling—by the enormous power which the desire to be relieved from suffering exercises over the human race—assemblies to be collected which would otherwise be forbidden: and, by relieving pain and disease, and winning over the kindly feelings of his patients by the practical philanthropy of his acts, laying the foundation for the superstructive, which it is the desire and endeavour of the missionary to raise. Yet this is being done under Dr. Dudgeon's care. In place of the detestation and which feelings have, on too many occasions, brought us in their defence into collision with the chinese authorities, and in many more instances, as at Yang-Chow-Foo in August last, have tacit approval of the authorities, and the good which it does to the body is apparently considered to countervail the evils of the attendant "preachings." More than one high mandarin of severely anti-foreign politics has been brought to acknowledge the superiority of the "barbarian" treatment, and the numbers of tablets erected by grateful patients—one of them the prime minister himself—sufficiently testify to the appreciation by the people of the benefits to be derived from western science.

Preaching is carried on daily for several hours, and in 1867, unpleasantness in connection with these proceedings—no murders or threatening of murder, as has been the case elsewhere, where medicine has not given her auxillary aid to the missionary. This seems to us to indicate with special force the expediency of increasing such missions. The whole history of the early church teaches that the physician and the missionary them to do so. For, mark—a point which is not sufficiently generally recognized—the assumption by Christ himself of the character of a healer of diseases was a matter as much of political necessity as of humanity. Otherwise, working out his divine mission by human means, he could in no other way—in face of the intense jealousy by the Roman authorities, of mob gatherings on the one hand, and the hatred of him and his doctrine by the Jewish leaders on the other—have collected to himself those multitudes who "heard him gladly." So with

that the existence of the great division of *Therapeutici* among the Essenes is put forth as one of the subsidiary arguments in

are also plausibly supposed to have been prepossessed of the new faith, who have adopted the healing art as a kind, or rather as a readier access to the hearts of men. All history teaches us the influence of the physician, from the first empirics dealing out samples by guess-work, to Sir Samuel Baker, administering his tartar-emetic to the savages of the upper Nile; and points to the greater utilization of this influence in mission work. That the union of the missionary and the physician will be more intimate in future, we are convinced, and when it is—when education and modern civilization have broken down the old barriers of race and nationality—when physicians, gentlemen, shall preach to *"gentle men"** with hearts made tender through suffering, and grateful for suffering relieved, the grand truths of Christian morality and love, we shall hear less of gun-boats and more of results. Then, and not till then, may [illegible] flocking to the Christian fold, from the East and from the West, from the North and from the South.

CASES FROM PRACTICE.

ARM PRESENTATION. VERSION FIVE HOURS AFTER RUPTURE OF THE MEMBRANES.

By J. M. Fleming, M.D.,

[illegible] Surgeon, Newry.

Georgé Meldir, aged 22. Third confinement. The two previous ones normal.

February 5th, 1869.—Called to see her at 12 noon. Was told that she had been in labour from 11 p. m. (13 hours), and that at 7 that morning, on the escape of the waters, a hand had come down. On arrival, I found the hand, and flexed forearm at the vulva, extending the forearm brought the hand completely out. Examination shewed it to be the right hand; that the shoulder has pressed low down into the pelvis; and the child lying with its belly anteriorly and head to the right. The waters had completely escaped, and the uterus was firmly contracted on the child, the form of which could be distinctly felt through the abdominal parietes. The pains had, however, entirely ceased, and the patient was free from fever.

Having passed her recumbent on a charpoy (she had, up to my arrival, been sitting on the ground), I succeeded in passing my hand along the child's arm and chest, and in reaching one of the feet. This was (with some difficulty) brought down, but, for a considerable time, the child remained fixed, although steady traction was made. The native doctor was then directed to assist the "version" by external pressure in the direction required, and in a short time, I had the satisfaction of feeling the child move distinctly, while the hand receded inside the vagina, and the irregular form of the mother's abdomen disappeared.

The patient was now allowed to rest for a short time, and then told to bear down with the pains which had returned slightly. In about half an hour the child was born, in a half breech position, the head [illegible]. The afterbirth followed almost immediately.

The child, a female of full time, was dead but not decomposed. The cord was twisted round its neck.

February 5th.—Was unable to see the patient again till to-day at 5 p. m. My native doctor had, however, seen her in the [illegible], and, finding that I was [illegible] had administered an ounce of castor oil.

At my visit found her in a high fever; pulse 130; skin hot and dry, and complaining much of thirst. The uterus, however, was not unusually enlarged, and only slightly tender on pressure. Of [illegible] I prescribed Gruel [illegible] to be taken [illegible] to [illegible] which [illegible] had [illegible] the [illegible] have one ounce castor oil with four ounces rice water administered [illegible] Pulv. Jacobi, ver. grs. ij.

February 6.—Found her this morning very much better. [illegible] had been [illegible] the [illegible] and the head [illegible] pretty well. To be kept on low diet, and have opium and antimonial powder [illegible].

Recovery was now rapid, and on 11th February she was discharged well.

* [illegible]

A CASE OF EXTENSIVE INJURIES OF THE HANDS, AND A SUCCESSFUL CASE OF RHINOPLASTIC OPERATION.

By Gopaul Chunder Roy,

Teacher, Nagpore Medical School.

The following case is presented for publication, to show how, in extensive injuries of the fingers, nature can be relied on with advantage. In fact, the injury was so violent in this instance, that I only deferred the amputation to observe the extent of [illegible] which, I thought, would certainly set in within 24 hours.

Nursia, aged about 25 years, was brought to the Nagpore City Hospital on the 26th July, with [illegible] of both hands caused by [illegible] being crushed under a heavy loaded wagon while working in the line of the G. I. P. Railway. The accident happened at a place about five hours' journey by rail from Nagpore, and consequently much blood was lost before any surgical assistance was obtained. The injuries he sustained were the following:—Right hand—the phalanges of the thumb and the head of the first metacarpal bone were smashed, and the broken bones protruded through a lacerated wound on its outer aspect. Tendons were not divided. There was compound-comminuted fracture of the second metacarpal, and much extravasation of blood on the dorsal aspect of hand, producing a diffuse boggy swelling. Middle finger lacerated anteriorly. Besides, there was a large lacerated wound on the inner aspect of hand over the hypothenar eminence, dissecting off a flap of skin from the palm, and exposing the palmar branch of vessels and nerves.

Left hand—ring finger was smashed to a pulp down to the first phalanx, and the head of the metacarpal bone of the middle finger comminuted. A lacerated wound over the first interosseous space completed the extent of the injury.

Except removing the left ring finger with the head of its metacarpal bone, which was irretrievably damaged, I had recourse to conservative surgery. I removed all the crushed detached phalanges of the right thumb by enlarging the wound, carefully avoiding cutting any tendon, and left it boneless. Other loose pieces of bone were dealt with in the same way; the wound was stitched up to keep the flaps in position, and dressed with oil and carbolic acid. Both hands swelled and inflamed and threatened to be gangrenous, the extravasated blood suppurated, but the parts were slowly healing by granulation, when the patient absconded on the 15th August.

At the time of his disappearance it was noted that the mobility of the thumb and fingers were partly retained, and I have no doubt that much of the motion will return in time when the effused lymph disappears by absorption, and the man will have better and more useful fingers in place of no fingers at all.

A SUCCESSFUL CASE OF RHINOPLASTIC OPERATION.

[illegible] case of Rhinoplastic operation performed in the person of a woman, named Jankee, aged 17 years, admitted on the 7th March at the 5th month of her pregnancy, whose nose was [illegible] the septum were cleanly divided downwards from the bridge of [illegible] upper lips was sliced off to the mucous membrane beneath. I [illegible] obliged to delay for two days for want of chloroform, after which [illegible] Indian method.

[illegible] notwithstanding the disadvantage, union took place by the first [illegible] of the upper lip at the same time, and it there united, forming [illegible]

[illegible], 1869.

The Indian Medical Gazette.

Notice to Correspondents.

INDEX FOR 1868.

For alone is one really use we shall feel obliged to subscribers intimating whether they wish it sent loose, or whether they prefer to return their Nos. for 1868, and receive in exchange a bound volume complete with the Index. The cost of binding will be Rs. 2-8.

WYMAN & CO.

and all professional communications to the Editor, direct.

THE INDIAN MEDICAL GAZETTE

131 From medical officers of the Bengal army.
8 From medical officers of the Bombay army in Bengal.
2 From officers of the Madras army.
5 From honorary members of Bengal.
2 From apothecaries in medical charge.
15 From sub-assistant surgeons in Bengal.

Further: there were 77 editorials or leaders on different subjects of general medical interest; 62 reviews of books; some [illegible] and much condensed information on various points of interest in Indian medicine as well as discoveries, and generally a letter on the latest European medical intelligence.

[illegible] original matter this publication is a splendid [illegible] perhaps two others might surely [illegible] One of the most valuable [illegible] this Journal was to make it general [illegible] medical literature of all India, and while it must be very gratifying to the officers of Bengal to find that they can support the [illegible] among the Medical Officers of the Bombay army in India, and in those of the Madras and Bombay [illegible] We could [illegible] let us [illegible] have been hitherto lukewarm to come forward and aid; so that this, the only periodical of its kind in all India, may be [illegible] the position of a journal which has gained a name and respect for itself, not only wherever it has reached in India, but also in England and abroad. To the late editor much of the success at home is due; he brought our paper prominently before the [illegible] and with [illegible] matter from our columns.

We [illegible] that on the list of [illegible] and 19 in Bombay; also that among the "original communications" [illegible] staff of Bengal. We would beg them to keep up the practice of contributing; they have one of the largest fields in India to cull from, and as they become more practised writers, their papers will be full of interest and instruction.

We [illegible] their many practical and useful papers.

We [illegible] usefulness that the journal has already gained; and while the sciences of medicine and surgery are daily advancing in [illegible]

HILL STATIONS IN BENGAL.

OUR attention has been drawn to a letter from Dr. Beatson, formerly Inspector-General of Her Majesty's hospitals in the Bengal Presidency, published in the *Lancet* of the 13th February last.

Dr. Beatson writes:—"When I left India in 1868, the amount of accommodation (in hill stations) was much the same as I found it on my arrival in Bengal in 1863." The sentence expresses truth; but the substance hardly gives the idea of the progress that is going on to establish British troops in the hills, as the result of the conference on the strategetical positions of the army that took place in 1865.

We have been at some pains to find out the number of men and families who were in the hills during 1866; we can now show also the number who will reside in the hills during this summer of 1869, and the probable number that will be sent there in the two following years.

In the hot weather of 1866, there were 4,256 men and 206 families resident at the different hill stations, including 1,051 men employed as working parties on several hill roads.

In the course of the summer of 1869, there will be 5,501 men and 480 families accommodated in the hill stations, including 1,450 men employed as working parties; or, using figures of comparison, in 1866 there were 11·5 per cent. of the troops housed in the hills; in the ensuing summer there will be 18 per cent. And although this only shows an extension of barrack accommodation for 716 men, it does show that increase, and also that there are 274 more families provided for now than was the case two or three years ago.

We can thus summarise the present state of progress:—

At Ranee khet, a newly-planned hill station near Nynee Tal, 200 men are to be accommodated this year; but it is believed that quarters for a full regiment, and probably a convalescent depôt, will be shortly sanctioned; and it may reasonably be expected that two years hence upwards of 1,000 men will be there provided for.

At Chuckrata, another new hill station, three marches from Landour on the road to Simla, provision has been made this year for [illegible] 500 men, and 40 families, while it is understood that sanction has been given to establish a convalescent depôt there also, which, within the next two years, will provide for at least 500 more. At Darjeeling, where, from the decay of old buildings, only 184 men and 30 families can be sent this year, new barracks are being constructed to shelter a full wing of a regiment (450 men), and two years hence will see that number settled there. At Dalhousie, barracks are building for 500 men, of which two will be ready before the rains this year, and 150 men will be sent to occupy them; the remainder of the buildings will be completed before the rainy season of 1870; it is also proposed that a convalescent depôt should be established here as well.

We thus show positively that next year at least 350 more men will be added to the present 5,501—of two years, and that in the summer of 1871 an additional at least 2,000 men will take place to the figures already given. During the next year also it is very probable that the strength of working parties in the hills will be further increased.

We should like to see this occupation for soldiers more rapidly extended; from the earliest times, soldiers have been utilized in this manner, and always with the greatest advantage; the value of troops so inured to work was illustrated last autumn in the men who, hardened and seasoned by labour and camp life, took their place in the Hazara campaign, and suffered nothing during their exposure in it.

Working parties, who numbered 1,051 in 1866, will number 1,450 in 1869, and there is no reason why a progressive increase should not go on. The present Commander-in-Chief initiated the system when in command of the Bombay Presidency, and he is still well known to be a warm advocate of the practice; the system also is being looked on with more favorable eyes by Government, as the results have proved so satisfactory in regard to the health and conduct of the men, and as the products of their labour has proved to be so profitable.

It has been stated above that 18 per cent. of the troops in Bengal will be accommodated, or employed, during the present year in the hills: and if we take the strength of the army as it at present exists, and calculate accordingly, we shall find that during 1871, 24·7 per cent. will be quartered in them during that year: this figure, moreover, does not include a certain increase in the number of families sent up from the plains, and a probable increase in the strength of the working parties.

The Royal Sanitary Commission at first proposed that at least 20 per cent. of troops should be in the hills: that amount will be exceeded the year after next. More recently, however, that commission considered that not less than one-third of the troops should be accommodated, and that the remaining two-thirds should regularly have their turn. Dr. Beatson's views have ever been "that nothing short of hill accommodation for at least one-third of the British force in Bengal will keep that force in good health and in thorough military efficiency;" and, again, "every regiment, I conceive, should spend the first two years of its Indian service in the hills, and afterwards two years in the mountains for every four years in the plains; with such an arrangement, every regiment landing in India might pass through its ten years of Indian service without being seriously impaired in health."

We fear that there are no measures in operation to bring the percentage up to 33·3, or the one-third required by the most competent authorities. No signs are evident of any sites being examined for new stations, or for any such increase to existing ones, and beyond the possible augmentation of working parties in huts or camps, and the probability of more families being provided for, we do not see a prospect of the 24·7 per cent. being exceeded for some years to come.

On looking back, we cannot shut our eyes to the fact of how little has comparatively been made of our mountain ranges. Authorities in England, and unprejudiced observers in India, cannot understand why, having such climates at our command, we have not utilised them, and kept a much larger force of men there, who could well have been spared from the plains; the only excuse that can be urged is, that they have not understood the financial and political difficulties of the case.

The time has now arrived, however, for seriously considering the extension of hill stations; as presented by Sir Roland

although, perhaps, as Dr. Beatson remarks, "it has been the

advancing facilities of communication, which brings the hill stations in such close connection to the plains, and will allow of the British troops in the country being placed in climates

of hill stations for troops before the mutiny, under the govern-

the government of the Queen.

The following list shows the hill stations in use before 1857, with the year of their first occupation :—

1. [illegible] — 1828
2. [illegible], about 1841.
3. [illegible]
4. [illegible]
5. Darjeeling, occupied about 1849, as a convalescent depôt.
6. Murree, a convalescent depôt occupied about 1851.
7. Dhurrumsala, two barracks, occupied about 1854.

Presidency for the eight years preceding the mutiny, *i. e.*, from 1849 to 1856, there was a percentage to average strength in the

At the average yearly strength of the last eight years, from 1861 to 1868, of 38,692, the percentage of occupation for

The increase in hill stations has been in reality nothing since

1. Nynee Tal, temporary barracks erected in 1858, occupied
2. [illegible]
3. [illegible] 1865
4. Dalhousie, barracks building.
5. Chukrata, do. do.
6. [illegible],

It is very questionable whether it is expedient to build efficiency; they have an expensive staff, and otherwise add much to the military charges of the country.

tion of the rotation system, as recommended by Dr. Beatson, instead of to stations in the plains; the effect of such a preventive measure would be to lessen the necessity for more convalescent depôts; for, under the system, the general health of regiments would be much stronger, and fewer men would break down: moreover, men dislike these depôts, and would never leaving their comrades, their regimental associations and institutions, and being placed under new officers; and even now, with the large number of troops quartered in the plains, it is often a difficult matter to fill up the depôts as they at present

ordinary diseases of the plains, and to whom change of air for a season would be of advantage. Dr. Beatson's letter would give the impression that an increase in the barrack accommodation in the plains is now being carried out; there is, however, no extension best known sanitary principles, on or near the old sites in Government has spared no expense in the barracks, and have proceeded with them in a most liberal spirit, giving men an upper-story to sleep in, and increasing the individual superficial space of occupation. We hardly think, therefore, it is just to attribute to the Government the state of feeling pointed at in the following sentence; that because there are now good buildings in the plains, "the existence of such accommodation will always induce Government to insist on its being made available, whether the troops, who occupy it, are really required in the locality or not."

A certain number of troops must ever be stationed in the plains; and Government have decided, with the view of effecting a saving in the life and health of the soldier, to give them the best description of barrack known, and as it is impossible to foresee what stations will or will not be fully required in future years, so the new barracks are being built in so substantial a manner that if unoccupied for a season or two, they

We cannot pass, without remark, a reply to Dr. Beatson, was subordinate to him in India. The letter is evidently called forth by a strong spirit of antagonism, which, if it could have weakened or ignored Dr. Beatson's arguments for in a truer light, we should have been glad to welcome.

misleads in a far more serious matter, and questions the utility line he has taken; all his arguments against them are simply not one of them can stand against the well-proved fact that

Dr. Gordon refers to—"Official records prove that regiments

for a time removed from the latter." He could not have made a more damaging statement. During the Sutlej and Punjab Campaigns in 1845 and 1848 the finest and most efficient regiments had been quartered in the hills, and he can only mean those regiments, who had been stationed in the Simla group of hill stations, when ordered down on the breaking out of the mutiny in 1857. These started in trade health: on reaching the plains they came into the atmosphere of a cholera epidemic then raging. The disease, of course, attacked them, they carried it with them to the walls of Delhi, and it never really left them on the whole march after the capture. Is it fair to attribute the loss of fighting character to having been stationed in the hills?

He would appear to be an advocate for regiments not going to the hills at all. He instances his own regiment, the 10th Foot, which "landed in India in 1842, and served continuously in the plains until 1857." We should like to know the vital statistics of that regiment; in its 15th year it had been probably recruited nearly twice over; and it is to save such destruction to life and health that residence in the hills, in exceptional cases, is recommended.

We need not pursue the subject further. We have shown that the numbers located in hill stations have increased since Dr. Beatson left the command, and that the progress of extension is still going on. We have pointed out how little increase in accommodation on the hills has as yet followed the augmentation of British troops in the country, and we have expressed a hope that the matter will still be taken up earnestly.

We are convinced that, although much attention has been paid to sheltering the men in the plains, there has been too little progress in utilizing the climate of the hills; but we must take the facts as they have been shown, and congratulate the army in a reduction to be effected in the course of two years, 24·7 per cent. of their numbers will be stationed in a good climate, and we must hope that measures will soon be thought of to provide for the remaining third of their whole numbers.

THE EAST INDIAN RAILWAY.

PROCEEDING up the country in March last, we thought ourselves it might be useful to note the state of the line generally, the [illegible] and conveyance arrangements on it, and the practical conveniences at several stations, with a view to drawing attention as to the one and attention paid to these matters "on the line." The barrack offices for troops, although somewhat improved of late years, are still often found in a very disgraceful state, from want of care and supervision perhaps, but more from the rough utensils provided for their use, in the absence of this rich and great country, however we expected to find the most modern appliances, and a system of complete efficiency in adopting them for use.

We conceive that railway stations have every facility for being kept in the cleanest possible order, at a minimum of expense, and that nothing should be done in part to [illegible] arrangements which could be taken exception to. In regard to "offices" particularly, although there is a rush to them on the arrival of a train, there are many hours when the places are empty, and therefore there is no excuse for the most perfect cleanliness being neglected.

With this preamble we will proceed to take our place in the "up-express" from Howrah. On the platform here a strong urinous smell directs you to the office sought for: separate partitions are here ranged against one side of a long passage-like room, very badly lighted, an open iron or zinc tubing, some six inches wide, runs along the whole length of the wall, into which water is constantly dropping in sufficient quantity to cause a small stream; below the tube, on the floor level, is a saucer-like stone drain, the joints cemented apparently with lime mortar. The surface of the drain was thickly incrusted with evaporated salts of urine, and hence the powerful odour which pervaded the place. Gratings were most conveniently placed to stand on, and we must say that, although formerly frequent visitors at the station, it was the first time this state of things had been noticed; it is mentioned now to show that where there is a bad system, its effects must appear some time, and be offensive. Against the opposite wall are enclosed places, each containing a fixed wooden commode, apparently on the water-closet system, but the pans were choked up, no water was in operation, the woodwork of the seats were overhead with dump and dust, and all was so objectionable that to use them would have been difficult. With the ample command of water at this station, and the facilities of flushing and discharging sewage into that great sewer of Calcutta—the Hooghly—only a few yards distant, it seems extraordinary that the patented inventions of modern times have not been made use of.

Starting about 9. p. m. with the intention of going "through" without stopping, *i. e.*, a journey of 1,155 miles to be performed in about 52 hours, facilities for sound and unbroken sleep should be afforded, whatever may be the traveller's capabilities for enjoying it, but just as you get it soundly you are waked up at Burdwan, in three hours time, with "tickets please, Sir." We would suggest to the Railway Company that they should institute some system by which "through" travellers could be saved this positive inconvenience; even if injury to health does not ensue, from the less capability of bearing fatigue that a broken night's rest occasions in a long journey.

Sahibgunge.—Reached about 7 a. m.; on the up-platform there was no outward sign; after investigating several doorways, the office was discovered. There were compartments, in each of which was an iron pan fixed on a light iron tripod; the pans had been used, and were filthy: there was no other convenience, or place set apart, and the state of things may therefore be better imagined than described.

Mo[illegible].—A common earthen [illegible] on an iron tripod was the primitive arrangement at this station; an ordinary commode, filthy, dirty, and the woodwork soiled and sodden, was the other convenience.

Dan[illegible].—The office is a little distance from the [illegible] part of the platform; a structure, a "Jenning's" urinal, meets you at the entrance; the original patent has six partitions; here the same circular space is divided into four, and completely prevents privacy; coverless wooden commodes were placed in compartments made with sheets of galvanized iron, placed on end. Galvanized iron pans are here fitted into a wooden frame: the seats were most filthy, they were discoloured and sodden with filth and moisture, no one could attempt to sit down on them. This office is evidently used by all classes, and the numerous [illegible] on the divisions of the compartments [illegible]

tripod.

six or seven compartments, each about three feet wide, and open

person entering!

the stations of the line are not in the state they should be; if

The real dry-earth system could be carried out and efficiently

tions, and we would advise the introduction of Moule's self-

tail in a few instances, there would be time to put it to rights before the next train would arrive: at all events the use of dry

insisted on.

"Earth closets undoubtedly neutralize, most efficiently, the nuisance arising from human excreta, and make their removal a question of ordinary mechanical transport; and it is impossible to rate too highly the beneficial effect of their adoption in cottages, detached buildings, hot climates, and, in short, under any circumstances, where a supply of water is deficient or difficult of attainment."

Where water is used for flushing, as it is at Howrah and other stations, the latest and best inventions ought to be supplied: Macfarlane's or Jenning's water latrines, &c., are the best fitted for use, and once placed in position would give no further trouble.

At the smaller road-side stations, the dens marked "gentlemen" were most primitive, either an iron pan on a tripod, or an earthen pan in a commode, was made to answer for both purposes.

White-washing the walls, or using lime mortar in any place where urinals are situated, is very objectionable: tarring the lower part of the walls of such places, as it is carried out in the Presidency jail, would be a very great improvement.

some very decent and spacious arrangements for natives, but which were entirely absent on the "up" line. At many stations there was no place set apart at all, and the far end of the platform was often made use of.

evident that these conservancy arrangements are not as they should be. They would strike the travellers of all nations as quite unworthy of the care that is exhibited in the other station arrangements; they would contrast painfully with the conve-

is still more backward, but there is no reason, because it is in India, that common decency should not be arranged for, and that more practical appliances should not be brought into use, and efficiently worked.

We could not help noticing the dirty state of the space between the rails, in the larger stations especially. This surface being covered with broken bricks, or *kunkur* perhaps, renders good sweeping impossible. Could not some smoother substance be used for the space under shelter of the station roof? In several stations there was much grease spilt about, and the smell was not pleasant on a warm day; it must be much worse in hotter weather. In many stations they are very careless about the spilling of grease, or rather the outpouring of grease

the wheel-box, and this causes much unnecessary soiling of the ground. We saw at several of the smaller stations a very good plan to obviate this nuisance, which might be adopted in all. The man carrying his grease-tub in one hand, carries a small pail in the other, which he puts under the grease-box, so that everything which comes out goes into the pail, and is thus carried away. These may be thought minor points, but when it

and that it is going on day after day, mixed up with the rotting

source here of mischief.

Passengers are quite at the mercy of the water carrier for drinking

vernacular of each station, but there are no covers or protection

inspected, we should say they were never used, the *khistee* sometimes carries a *sorai*, which he has just filled from his water-bag, or quite as often he gives you water in a tumbler from the *mussuck* itself. Surely some more civilized arrangements than these might be introduced in a country where water at each station is such a necessary of life.

line; if they had been planted round stations, for instance, as they were built, how much shade would be given even at this time, and how much promise for the future! Groves of valuable timber, which would have replaced sleepers and afforded unlimited fuel, might at this time be growing up, if a little forethought had been exercised.

It is also to be wondered at, that more advantage has not been

nurseries; if the hollows from which earth has been taken for embanking had been planted out, moisture collected there would have rapidly encouraged their growth. The hedges, too, are unlined by trees, and one thus sees everywhere the absence of any provision for fuel and shade.

pore, acacia trees are luxuriant and high; the engine smoke is confined by them, and fills the carriages.

We should imagine more protection might be given to the

through—it is part of their duty to do this, and as performance of it often involves the safety of the train, they should be protected in doing so. Constantly looking to the front without protection, while going rapidly through the air in a Bengal fog, or against a hot wind in the North-Western Provinces, must be a most trying thing, and straining to the eye and sight. In America and England the protection is afforded; why not here?

We fear we may be thought to be cavilling at trifles; but the object has been to point out where present practices might be improved upon. To turn to a pleasanter task, that of finding *no* fault, we believe that there is not a finer, safer, or more comfortable line in the world than the E. I. Railway, from Howrah to to Gazeeabad. The sleeping carriage is in itself, we have no hesitation in saying, the best fitted up of any line in the world; there is length and breadth, and a good cushion to lie on, and only those who have made long journeys in Europe and America can appreciate the luxury of having such space all to oneself.

At Gazeeabad, on changing carriages to those of the Punjab Railway, we find the change in comfort at once. On the principle of the P. &. O. steamers, which are the worst ventilated ships in the world, though plying in seas where the best and most perfect airiness is required; so, on the Delhi Railway, where for some months of the year, those during which the most travelling would take place, you would be glad of the warmth, softness, and comfort of the Calcutta line, you find the carriage with open cane-work from end to end, so that the wind blows through, and you can see and hear the occupants of the next compartment; the seats also are of cane, each bench having four wooden bars across, to point out the place for four travellers, but to lie down on this is impossible, at least without the pain of many a sore bone in the morning. There is some sort of an arrangement by which planks are pulled out from under one side, and reach across to be fastened under the seat of the other, like the bars of a Calcutta bed, this is for the convenience of sleeping we were told, but it would require six inches of mattrass on their top to make them at all endurable.

The small number of accidents on the E. I. Railway has been most creditable to the management of the company: seeing, however, that double the number of people were killed in 1868, to the preceding year, we hope they will not suffer their servants to get careless.

There must be such an amount of sameness in the daily working of small matters, which, if not attended to, might occasion the loss of all the lives in the train, that we often wonder more accidents do not happen under the common apathy of human nature when daily empl°yed in the same routine.

How much now depends on the native telegraph worker under the station-master,—how one misspelling, or a moment's forgetfulness, might, on a single line, cause two trains to meet half way at speed.

The employés appear to be on duty a long time eight hours on a stretch is not uncommon; if too much tension of attention is enforced, men must come to occasionally, as the Americans say, "letting things slide."

The following table is interesting and curious:—

For the year 1867.

Hereon, Value—	Passengers.	Country.
1 Passenger out of	1,658,551	in Prussia.
1 ,, ,, ,,	5,000,000	,, Belgium.
1 ,, ,, ,,	1,570,000	,, France.
1 Passenger out of	1,660,000	in England.
1 ,, ,, ,,	116,541	,, Russia.
1 ,, ,, ,,	2,376,234	,, E. I. R., India.
1 ,, ,, ,,	1,005,201	,, on the same line in 18

Of America we have no similar account: it is the country, next to Russia, where human life is taken least care of, but in the year 1866, 79 persons were killed in the State of Jersey, U. S., on 700 miles of rail only. In that year, the total number of miles open in the States was 51,000, and if the same ratio was persistent, 5,600 people would have been slaughtered.

We should like to hear a medical account of the Viceroy's recent remarkable journey. An express train, filled with the members of Government, travelled the whole distance, 1,155 miles in 41 hours, this included five hours of stoppages—actual number of hours 36—a little over 32 miles an hour: the quickest and longest journey ever performed in India These officials had led a sedentary and office life for some months past in the enervating climate of a Calcutta winter, and we cannot fancy but that some among them, starting suddenly on such a rapid journey, must have felt uncomfortable present effects, where we hope, however, they will end.

We may, on a future occasion, pursue this subject, and to the physiological action of railway travelling on such long journeys on all classes, sexes, and ages. We are quite sure of one thing, that, but for the comforts and conveniences of the E. I. line, the public would long ere this have found out that such travelling could not be performed with impunity.

HEART DISEASE IN INDIA.

In the *Lancet* of the 20th February, Mr. Myers of the Coldstream Guards, attacks the subject of heart-disease in the Army, and gives this table:—

Statistics of deaths from aneurism in the Foot Guards and Line regiments at home compared with the Navy for four years.

Year.	Army.		Navy.	
	Strength.	Ratio of deaths from aneurism per 1000.	Strength.	Ratio of deaths from aneurism per 1000.
1862 ...	49,332	·28	58,870	[illegible]
1863 ...	44,291	·47	54,090	[illegible]
1864 ...	40,539	·37	53,000	·18
1865 ...	42,228	·35	51,210	[illegible]

The comparison between the Army and Navy is very instructive. We have extracted from Dr. Baxter's tables the following statistics of heart-disease and aneurism in the British Army in India since the year 1858. Deaths under "heart-disease" occurring under Madras entries and Punjaub these are added for the sake of [illegible] diseases with Palpitation and Angina pectoris as a [illegible] —

1863 ...	[illegible]	45	·11	1·00	·91
1864 ...	[illegible]	35	·11	1·00	·97
1865 ...	[illegible]	[illegible]	·11	1·00	·89
1866 ...	[illegible]	[illegible]	·11	1·00	·89
1867 ...	[illegible]	[illegible]	·22	1·00	·78
1868 ...	[illegible]	[illegible]	·33	1·00	·67
1869 ...	[illegible]	[illegible]	·33	2·00	1·67
1870 ...	[illegible]	[illegible]	·44	2·00	1·56
1871 ...	[illegible]	[illegible]	·44	2·00	1·56
1872 ...	[illegible]	[illegible]	·44	2·00	1·56

We have quoted a table showing the ratio per mille of [illegible] from heart-disease and aneurism, for three years.

Arms of Service.		Ratio per mille of Strength.	Ratio per mille of Deaths from Disease.	Ratio per mille of Deaths from all causes.
1866	Artillery	11·6	3	3·8
	Cavalry	11·4	2·1	2·4
	Infantry	9·3	1·1	1·4
1867	Artillery	11·4	6	11·7
	Cavalry	7·8	1·8	1·8
	Infantry	9·1	2	2·9
1868	Artillery	8·5	1·2	1·6
	Cavalry	3·4	1·2	1·6
	Infantry	7·1	2	2·8

We [illegible] a good field [illegible] subject again in a subsequent number.

THE GOOD PROPHET.

THE *Friend of India* says, with reference to Government [illegible] gone forth for abolishing the Indian Inspector-Generalship [illegible] for such employment. In neither of the Presidencies has intermediate imprisonment been as yet introduced. In the North-Western Provinces, "convicts are also eligible for promotion to prison offices, after a uniform period of probation, and they are reported to be the most trustworthy officials of the class; "intermediate imprisonment has not yet been introduced, but the Inspector-General is fully aware of its advantages, and looks forward to its establishment." In the Punjab, Oude, Central Provinces, and Burmah, the reward of promotion is identical with that of the North-Western Provinces, but in the two latter, disqualification of certain classes exists as it does in Bombay. The Central Provinces have adopted the Bengal rules of intermediate imprisonment, in the Punjab it has not yet been introduced, but a committee is now engaged considering the subject.

There is another reward attainable—remission of sentence. It is not allowed to any convict in Bengal, and can only "be granted under the orders of Government for any special act of good service." In Madras there is a certain system, entitling superior good conduct and industry to obtain partial remission. In Bombay the practice is not in force. In the North-Western Provinces, Punjab, and Central Provinces the above reward [illegible] which is said to work admirably. In Burmah, the system reported would appear to render the attainment of this reward easier than in other provinces; and this province offers a further additional reward [illegible]

There has ever been much diversity of opinion regarding [illegible] Its efficacy, however, as a means of reformation, or for promotion [illegible] high authorities in India; the chief argument against it is, that it lowers the irrevocability of the sentence of the judge.

As the question and practice are very important, the Government of India has recently requested the local Governments and administrations to re-consider their rules in force, and to report on the subject.

The punishments employed in the Bengal jails are fetters, [illegible] however,

are so frequently resorted to for mere safety, owing to the extreme insecurity of many of the prisons, as to be of little efficacy as a punishment; and as in the majority of the Bengal jails there are no cells, flogging is the only really efficient punishment."* Twenty per cent. of the daily average of prisoners were beaten in 1867; it is reported that the number of stripes never exceed 30, that no permanent injury has ever been sustained, and that it is always performed with the cognizance of the medical officer.

With a view, however, to lessen such an amount of flogging, a system of penal dietary has recently been introduced with the sanction of the Government of India, who directs a report to be made of its action a year hence, for submission to the Secretary of State.

In Madras and the North-Western Provinces, the punishments in use are flogging, extra labour, and double irons, and they have rules for regulating restriction of diet; this latter, when awarded as a punishment, consists of a diminution of the ration by one-third, unless there are medical reasons against it.

Bombay has solitary confinement up to seven days, confinement in the stocks up to 12 hours, and flogging not exceeding 25 stripes.

In the Punjab, Oude, and Central Provinces, the punishments are increased labour, refusal of permission to see relatives, solitary confinement, heavy irons, and flogging in extreme cases, under the regulations in force in Bengal.

In Burmah, a maximum of 40 stripes is allowed, and for the punishment of females, they employ means which do not appear in other jail codes, "placing them in a straight jacket, or handcuffs, or both, and cutting their hair close." In Mysore, extra to all that has been detailed, are "separation in a punishment-yard, punishment exercise, wearing a mask, and two species of solitary confinement."

Education is conducted on nearly similar principles throughout all the jails in the country. A certain number of prisoners are compelled to learn at hours not employed in labour; and the more educated warders of the convict class are made to overlook them: no paid instructors are employed.

As education spreads among the mass of the population, a different system will rise in jails; but, at present, while the educational efforts of the State can hardly be said to have reached the stratum of the class which furnishes the prison population, it is not thought right to entertain paid agency, or to insist more on the acquiring of knowledge. To discharge men from jails, educated, with the means of thus gaining a higher livelihood, would be a great act of reformation certainly; but an act that would be gained at the expense of elevating a dishonest above an honest man, and would, in fact, hold out a premium on crime.

In Burmah, where it appears that "seven-tenths of the prisoners are able to read and write their own vernacular, the form of education that has been introduced is to teach English;" and this arrangement has very properly been cavilled at, because teaching a prisoner a remunerative employment, which he can make use of after his discharge, is not a deterrent punishment.

The views of the committee of 1856 on this subject were against instruction of the criminal population, as giving them advantages that honest men could not obtain; but "at the present day Government will probably be prepared to admit the obligation of finding elementary instruction for all juvenile prisoners, and for all long-term prisoners in central jails, by convict agency if possible, if not, by paid agency."

It still remains a question whether the systems of labour and punishment in force have any deterrent effect on the native of India; his want of shame or gratitude, his apathy, his disregard of provincial or family ties, his own conscience unawakened by civilization from its dull and blunt state, the absence of religion to form motives of action, and his caste, which frequently comes in to teach the son what the father and his former progenitors have done before him, all combine to make him a being not easily to be acted on through his intellectual qualities; so that it cannot yet be said that jail discipline in India is really satisfactory, either as a reforming or deterrent agent.

The local authorities of each province, says the note, hold such contradictory views on the result of prison discipline, that no satisfactory statement can be made. The committees of 1836 and 1864 both note the increase of the convict class, but hope that the effect of improved knowledge and discipline will in future years diminish their numbers; firstly, by educating the masses outside, and secondly, by making punishments inside a jail really punitive. The Inspector-General of Bengal asserts that prison discipline under him is not deterrent; the Lieutenant-Governor of Punjab asserts that prison discipline in that province is.

In the North-Western Provinces a statement shows that there were 16,576 prisoners sentenced in 1861, against 28,761 in 1867, and re-convictions have increased almost in a like ratio; "but in the absence of authentic statistics of the increase of population, of the effect of a more vigorous and searching administration, of the operation of the codes that during the last few years have come into force, and of the greater efficiency of the re-organized police, any inference would be very untrustworthy. And it will be remembered that even if complete statistics for a sufficient number of years were available in any province, they would prove but little as regards any *system* of prison discipline, because no province can be said as yet to have any fixed and complete system of prison discipline at all. Every year sees changes and improvements, and, pending the completion of central jails, prison discipline must remain in a transitional state."

(To be continued.)

* Is this what calls forth the remonstrance of the Bengal Government, when they say that the "restrictions on flogging, &c., in the Indian Penal Code, are only to the detriment of the prisoners"?

THE FURLOUGH RULES OF 1868.

A recent "Indian Public Opinion" has [illegible] to the proposed uncertainties of furlough rules, [illegible] to staff and regimental and civil appointments, holding or vacating them on leave, &c., in relation to the medical service, and [illegible] private advantages [illegible] owing to the paucity of medical officers in the country, the question at issue will probably be settled before that leave is [illegible]

"No, we rather think not."

THE CAMP AT UMBALLA

THE general sanitation of the large force recently assembled [illegible] has elicited the following approbation to the General in command :—

"His Excellency would also beg you to intimate to the [illegible] the troops whilst the concentration has lasted."

[illegible] assistance [illegible] Staff Assistant [illegible] 21st Hussars [illegible] Brown, [illegible] orderlies to assist him.

We hope in our next number to be able to give a detailed account of the measures adopted.

THE NORTH SUBURBAN HOSPITAL.

[illegible] the above institution, which owed its origin to the Famine distress of three years ago; it has been since retained by the generous exertions of the neighbourhood, who witness and value the benefits it confers on the sick poor around.

The hospital is for "in-patients" only, the out-door sick of the place finding attention in the "Chitpore Dispensary," under the care of Dr. Nayler, who is also one of the Honorary Secretaries of the North Suburban Hospital. During the year [illegible] 721 [illegible] was [illegible] and [illegible] average [illegible] Dr. [illegible] resident medical officer.

[illegible] were Rs. 7,784, of which the Suburban Municipality contributed [illegible] frequently in need of repairs, and unhealthily situated;" and a [illegible] that the Secretary had [illegible] with the principal [illegible] a building fund; the meeting was unanimous in their intention to push their exertions to the utmost, not only to keep up the present [illegible] money to buy ground, and to build a regular hospital.

We would strongly advise the Committee to adopt the suggestion of one of the Honorary Secretaries, and to build, on the plot of ground they will possess, a series of detached buildings on the principle of the "Cottage Hospitals" in England, that is, detached buildings, with accommodation for four or six patients in each. Each building should be only sufficiently distant from its neighbour to insure good ventilation around.

We are convinced it would cost less to build some six or eight of these buildings in a permanent but plain style, than to have a larger and more pretentious building, which would perhaps make more actual show.

Official Selections.

EXTRACTS FROM THE RECORDS OF THE BENGAL MEDICAL DEPARTMENT

THE Inspector-General of Hospitals having permitted us to [illegible] even to print in full, from time to time, reports from the [illegible] condition of the European soldier; for the extension of European skill and medicine to the natives of the country; and for [illegible] general, displayed, which would not discredit similar reports [illegible] welfare of those under his charge. The letters that will appear from time to time will show them to have been the production of educated gentlemen.

[illegible]

Court of Directors' letter, 1st September, 1785.—Minutes of Council, 2nd May, 1786.

"1. [illegible] to reform the Medical Department in India, and to place our military hospitals on a regular system, by which their annual [illegible] and wounded properly attended to, and the gross abuses checked of receiving into the hospitals men with trivial com- [illegible] the following rules and orders are henceforth to be established [illegible]

2. The Governor-General in Council shall appoint a [illegible] deserving officers to direct and superintend the duties at each hospital; and are to be responsible for the conduct of [illegible] hospital takes place, the Hospital Board will recommend to [illegible]

deserving regimental mate to succeed the hospital mate. But, although the most ample encouragement is hereby given to merit, it must yet be understood that seniority, where merits are equal, is to have the first claims to promotion."

The records are in good preservation: they are written on thick demi-royal paper, in good, plain, legible hand-writing, letter, indeed, than is often employed at the present day, and in ink which, though here and there discoloured by age and damp, is still quite distinct and legible; they are bound up in yearly or half-yearly volumes.

The first volume for 1787 opens with "A meeting of the Hospital Board" held at Fort William, the 2nd January, 1787: Messrs. Ellis, William, and Fleming being the members, and Surgeon A. Campbell the Secretary.

The Board held weekly meetings every Tuesday: their first work was to read and approve of the proceedings of the former meeting. They then considered letters addressed to them, letters they addressed to Government, corresponding direct with "the Right Honble Earl Cornwallis, Governor-General in Council," and to members of the service under their different titles.

One of the first letters is addressed by the "Head Surgeon, Cawnpore, dated 23rd December, 1786, to James Ellis, Esq., Physician General, &c., Member of the Hospital Board."

He advises the board to sanction provision of quarters for the gentlemen who attend the general hospital at the station, and recommends the purchase of a house (for Rs. 1,500) well situated between the European and Native hospitals, so that they could give the earliest attendance in either hospital on all cases of emergency.

The post must have been well arranged: for on 2nd January the board reply that "as the surgeons in the field are on the same footing with the officers," they deem your request inadmissible.

The first appointment of a surgeon to the medical charge of a jail would appear to have taken place about this time under a Board's letter to the Governor-General in Council of 11th January, (replied to by Government on the 15th January,) "as we think the charge of visiting the sick prisoners in the jail (at Futtehghur) would be better executed by a person particularly appointed for that purpose than by the hospital mates in turn, as is the case at present, we further request your lordship's permission to recommend Mr.—— to be appointed to do that duty under the direction of the Head Surgeon."

A week later may be noted as the origin of medical certificates. E. Hay, Secretary, writes from the Council Chamber, Secret and Military Department, by direction of the Right Honble the Governor-General in Council, to the "Physician General and other members of the Hospital Board": "I am also to intimate to you a resolution passed by the Right Honble the Governor-General in Council that, in future, any application of surgeons or assistant-surgeons to proceed to sea on [illegible] their health, will not be admitted unless accompanied by the testimony of a surgeon at the place of their residence, shewing the necessity or expediency of it; or, if no such testimony can be had, owing to the circumstance of no surgeons being on the spot, that you are to send in such evidence in support of the application as will justify an acquiescence in it."

The Surgeons of Artillery represent to the board that there are six compunders of lascars attached to each of the battalions of European Artillery, and that as the hospital allowance has recently been "restored to the surgeons of the sepoy corps to supply them with bazaar medicines and other necessaries," so some proportionate allowance should be granted for the lascars: this to the Board on the 29th January, and the Governor-General replies to the Board on the 31st January, that on their recommendation, the sum granted for each company of corps of Artillery lascars shall be twelve sonat rupees a month, to include all medicinal charges except doolies.

A surgeon at Jumalpore on being appointed to the 6th battalion of European Artillery writes to the Board that as his present appointment barely affords subsistence for his family, "he had entered into concerns of a private nature," and begs he may remain for twelve months more at his old station. This arrangement (without pay) is eventually sanctioned by the Governor-General.

The surgeon of the "new Fort" (the present Fort William) forwards a list of the Engineer corps employed on the works.

Exclusive of 18 European officers, it shows—

Lascars	...	110	Caulkers	...	3
Coolies	...	110	Sawyers	...	4
Carpenters	...	31	Plumbers	...	2
Bricklayers	...	36	Brass-smiths	...	2
European Supernumeraries	...	4	Iron-smiths	...	6
			European Writers	...	2
Draftsmen	...	4	Bheesties	...	12
Painters	...	3			
			Total	...	331

Additional { 10 Lascars / 10 Coolies } in the rainy months.

A petition from two assistant-surgeons, representing a grievance of twenty-four of their body, here takes up 27 pages of the demi-royal paper, on which the Board's proceedings are written.

A list of surgeons, dated 1st March, 1782, gives the Bengal establishment at—

1	Surgeon-General.	54	Surgeons.
2	Surgeon-mates.	31	Assistant-Surgeons.

The following is perhaps the first instance of the substance of sanitation or at all events provision for the sick being mooted. The writing is a copy of the original, from Mr. Hamilton, Head Surgeon at Futtehghur, to the Board, dated 3rd March, 1787:—"The sick at this station are placed in one of the cavalry ranges which is only tiled and not above 9 feet high: in the warm season from the lowness of the roof and retaining heat of the tiles, it will be as close and hot as an oven, which will render their situation extremely unhealthy, and increase their fevers, and prevent the cure of disorders in general. Another great inconvenience attending the hospital being there, is that the other ranges are converted into barracks which renders it almost impossible to keep the sick from mixing with the other men and getting drunk, the fatal effects of which are too well known; besides the place itself is equally as unhealthy as a fixed camp, from the filth, &c., occasioned by the great number of people necessarily around it. From hence permit me to represent to your consideration the urgent and indispensable necessity of a hospital, with other conveniences being built on a healthy situation, and walled in for the reception and preservation of the sick.

The next letter more immediately concerns sanitation of Britsh and native troops. It is from Mr. Ross Munro, Head Surgeon at Cawnpur: March. He reports the accommodation provided is unfit for sick Europeans, and that there is no provision whatever for native sick, and begs the Board to represent to Government that both from motives of expediency and humanity a set of proper buildings should be erected. Many of the European sick are obliged to be attended in tents, the others are lodged in a very low-roofed, confined apartment round the burial place of a large mosque, and it is equally incapable of being rendered a comfortable habitation in the cold, or a well-ventilated one in the hot season: and he goes on to say, this "building in which many disorders have already put on putrid appearances is so inconveniently placed at the eastern extremity of a cantonment, near seven miles long, that the winds must blow on it with the accumulated heat which they will have acquired by passing over a range of rocky hills of several miles to the westward, the cantonments, and the fort, so that the air would not be almost inappropriate to the patients during the hot months."

(To be continued.)

Review.

Disinfectants and Disinfection, by R. A. Smith, P. D., F. R. S, Edinburgh: Edmonston and Douglas.

This little volume contains a record of Dr. Angus Smith's experience in attempting to obtain results by exacts method hitherto untried. Most of it, the author tells us, has already appeared in print in his report to the Cattle Plague Commission, and in articles contributed to different journals.

After a short introductory history of disinfection, the author, under the head of "the dangers to be averted," gives such information as is necessary to make the general reader acquainted with the modern theories of epidemic disorders in their relation to the part played by decomposing animal and vegetable substances, and the extraneous introduction and development of the seeds or germs of disease respectively. The chemical and

[illegible] species of Lactic and Butyric [illegible] [illegible] [illegible]

HYPOSULPHITE OF SODA IN AGUE.

MR. SAUGER, Surgeon to the Convalescent Hospital, Leaford, writes to the *Lancet*:—

"The theory of the cause of ague and typhoid fever being due to the germs of a fungus having entered the system, appears to me proved by the following cases:—

In the spring of 1868, I had a very intractable case of ague in a boy eleven years of age, which resisted all the remedies usually employed in the treatment of that disease—these being given until the boy said his stomach could not bear any more. Following out the fungus theory, I gave the patient a scruple of the hyposulphite of soda, three times a day, which, in a very few days, got rid of the ague, and he has never had it since."

In the autumn, three sisters, and the mother of the four became the victims of a very bad tertian ague, which resisted the administration of emetics, quinine, bebeerine, and arsenical solution, but gave way to a very few doses of the hyposulphite of soda."

Short Notices of Recent Books.

Atlas of Venereal Diseases.—By M. A. CULLERIER, translated from the French by F. J. BUMSTEAD, M.D., Professor of Venereal Diseases in the College of Physicians and Surgeons, New York. Philadelphia, H. Lea, 1868.

Dr. Bumstead, who had for some time contemplated producing an atlas of venereal diseases of his own, was prevented by the great cost of labour in America. He, therefore, determined on translating the splendid atlas of M. Culverier, and this he has now done in the work before us. The distinctive character of the translation being that the plates are executed by chromo-lithography, instead of being done by steel engraving and hand-colouring as in the original. This work is certainly the most luxurious got up and elaborate thing of the kind we have ever seen. It extends over 326 pages of 4to., and contains ten handsomely coloured plates, embracing nearly a hundred figures of different forms of the disease. In most cases the line of the integument recalls the general features of French plates rather of the real texture, but the diseased portions of skin are brought out with considerable truthfulness. The illustrations of the Syphilides being in our mind remarkably life-like. The Editor and Translator has appended numerous notes of his own, and on those points on which he differs from the Great French Authority, he expresses his divergence of opinion, distinctly and emphatically. Dr. Bumstead believes in two distinct forms of syphilitic poison, and gives very cogent reasons for his belief. The historical portion of this fine work is especially good, and indeed altogether it is comprehensive in its treatment of a most difficult subject. We look upon it as a work of reference which every medical man, Physician, and Surgeon should possess, and while we must compliment the translator on the manner in which he has discharged his portion of the task, we must also thank the publisher who has been enterprising enough to undertake the production of so large and costly a work.

L'Origine de la Vie.—Par Le Docteur GEORGE PENNETIER. 3rd edition. Paris, Rothschild, 1868.

This little volume is prefaced by M. Pouchet to the great champion of the doctrine of spontaneous generation, and is written by one who has done good work in the branch of science; and it is very well illustrated with wood-cuts, scattered through the text. As might have been expected, it deals with the different experiments carried on by M. M. Pouchet and Pasteur to determine how low vegetable organisms come into existence. M. Pouchet says that monads and bacteria and vibriones are formed of the molecules which proceed from decomposing animal matter—he is the leader of the Heterogenists. On the other hand, M. Pasteur asserts that the germs or spores of these organisms exist [illegible] and that, on being introduced into decomposing infusions of organic matter, they cause the putrefactive and allied endings for which such decomposition is the cause. [illegible] of course, to be read with this qualification, that it is written by an acknowledged supporter of M. Pouchet's views. But it must also be borne in mind that both Professors Owen and Dr. Hughes Bennett, of Edinburgh, are convinced of the force of M. Pouchets' opinion. M. Pennetier, however, it seems to us, has not given too much force to his leaders, arguments, and in stating the experiment, he alleges facts which are unquestionable. We therefore urge our readers to take up this little volume, and read it for themselves. In the present state of the controversy, it would be out of place for us to express any opinion on either side.

Cases of disease of the nervous system in patients the subject of inherited Syphilis. By J. HUGHLINGS JACKSON, M.D.

In this brochure, Dr. Jackson reprints a paper read before the St. Andrew's Graduates Association. The author gives cases of extreme interest to prove that by working out family history, we often come upon syphilitic taint as the cause of nervous disease, where otherwise we should never have dreamt of associating the nervous disease with anything like venereal poison. Dr. Jackson is working in the field opened up years ago by Hutchinson, and with very excellent results.

Conservative Surgery in its general and successful adaptation in cases of severe traumatic injuries of the limbs. By ALBERT G. WALTER, M.D. Pittsburgh, U.S. Johnson, 1868.

This is a very remarkable work by an American Surgeon. It details a new process of dealing with injuries and amputations, and gives a multitude of cases which, as their records shew, were most successfully treated by this new method. The basis of this method, so far as we can comprehend it, consists in exposing the wounded part, and making deep incisions to set free discharged blood, and then poulticing the parts. He gives a suppositious case, that of a limb very much injured by machinery. It is of the utmost importance in cases of this kind, he says, that "free vent be given by long and deep incisions for the escape of effused blood confined under the fascia, between muscles, and in the cellular tissues of the skin, and that all attempts to bring the soft parts together, when lacerated or cut, by stitches, be strictly and absolutely discarded." "A limb thus injured should be placed without delay in its whole length on a well-cushioned sheet-iron or tin splints, and the detached pieces of bone removed. The wound should then be freely enlarged or if no breach of surface exists, a free incision on the long axis of the limb should at once be made through dermis and fascia," etc., etc. The author who is rather wordy in his description, then proceeds to state that poultices should be applied to the parts or fomentations, and he says that, under the genial influence of these, benign suppuration commences, and healthy cicatrization takes place.

A Practical Treatise on Perimetritis and Parametritis.—By J. Matthews Duncan. Edinburgh, Black, 1869.

Dr. Duncan has given us a very elaborate little treatise on two of the most serious affections of the womb, and by adopting the very useful terms which form the title of his book, and which we believe originated with Virchow, he has done something towards exactness and precision. He thus defines these two expressions: "*Perimetritis*, then, will strictly imply inflammation of the uterine peritoneum. *Parametritis* will imply inflammation of the cellular tissue in connection with the uterus. The symptoms and diagnosis of the two affections are shortly but very clearly described under the separate heads of pelvic hardness, tumour, distraction and fixation. But we do not find that the writer states anything more than is to be found in recent treatises like Hewitt's and other works. The chapter on treatment is perhaps the best in the work, and yet it strikes us as singularly deficient in detail. For instance, we find not a line in it suggestive of the value of tonics and stimulants in these affections. But on questions of poulticing and bleeding, the author gives much advice. In reference to the effects of distant blood-letting as from the leg or foot, he states that the profession in Great Britain have lost all faith in this treatment as well as in the correspondent doctrine, regarding venesection of special veins of the upper extremity in disorders of the head. But, he says, "enough remains in the well-known and, it appears to me, well-founded belief in the value [illegible] the poulticing [illegible] to prevent us from regarding these therapeutics as absurd." He [illegible] especially, and [illegible] from [illegible]

* A simple attack of ague [illegible] ague' [illegible], as the case may be, [illegible] and first season in India.—ED., *I. M. G.*

Progress of the Medical and Collateral Sciences.

[illegible] Action in Aphasia. [illegible] Dr. Mackenzie [illegible] vocal exercises, such as counting, singing, &c. Dr. Mackenzie [illegible]

Look to your Sub-cutaneous Syringes.—In a paper which [illegible] fact in relation to the graduation of the hypodermic syringe. He says that, on trying several of the syringes known as that of Pravaz, he found that it contained only one-half the quantity of [illegible] a point of the utmost importance, and it may help to explain the [illegible] required when used by the mouth. M. Bourdon also calls attention to another matter, which medical men may have overlooked. He says, always use the liquid for injection freshly prepared; if it is allowed to stand, moulds of all kinds become [illegible]

The Treatment of Pleuritic Effusion.—M. Dieulafoy [illegible] and short instrument, which he calls the capillary trochar, all [illegible] to the patient which is caused by the application of blisters. In case when the patient's skin is irritable, he recommends [illegible] by means [illegible]

A Glow-[illegible] for Microscopic Purposes.—[illegible] in researches on living organisms, especially in such structures [illegible] from the centre on one side. When an object under investigation [illegible] stage of the microscope, the slide is placed in the under- [illegible]

[illegible] it will be found that, by capillary attraction, the water on the under side reaches beyond the centre of the slide, and consequently beyond the hole with which it is pierced. In this [illegible]

The Undulatory Movements of the Intestines.—It is so [illegible] the graphic method, that we need not be astonished to learn [illegible]

Nerves of the Bladder and Sphincter ani. [illegible] by M. Masius. [illegible] Vol. XXV, No. 2.

The Dinornis. [illegible] Dr. Julius Haast in New Zealand, [illegible] man, this giant bird might be still living.

The Rouleaux of the Blood Corpuscles.—Why is it that [illegible] very unsatisfactory explanation. Professor Norris, of Queen's [illegible] paper read in February before the Microscopical Society of Birmingham, he concluded that the phenomenon is due to [illegible] of cork discs, so weighted as to be partially submerged when thrown into a vessel of water, immediately arranged themselves in rouleaux; while, if entirely submerged, they failed to do so. When, however, these discs were first soaked in water, and then plunged into petroline, they arranged themselves in rows just as in the first instance. He thinks that the phenomenon is explained by supposing two liquids to possess different properties. This condition, he says, "is supplied in the blood by the action of [illegible] which stasis is observed."

The Origin of the Globules.—Mr. Sorby, in a paper before the Royal Society of London, on the 18th of February, shows that, from certain air bubbles in the centre of sapphires and rubies, [illegible] at a considerably high temperature.

The Station and its Effects.—The [illegible] February 27th gives an account of some observations recently published on [illegible] — [illegible] which [illegible] and [illegible] and [illegible] In cases [illegible] It has been tried [illegible] there was great exhaustion, of which an unfavorable prognosis had been made. In these cases the results were favorable in twelve, [illegible] very soon.

ORIGINAL COMMUNICATIONS.

ON PUNCTURE OF THE KNEE-JOINT IN THE TREATMENT OF SYNOVITIS.

BY J. FAYRER, M.D., C.S.I.

WOUNDS communicating with the cavity of the knee-joint have always been regarded as extremely dangerous, as they are so frequently followed by destructive inflammatory changes which result in excision, amputation, or death.

The access of air to the opened synovial membrane is regarded as a great source of danger, as it is almost certain to set up irritation, followed by inflammation, which, passing into the suppurative stage, rapidly induces disorganization of the tissues that enter into the formation of the joint, and gives rise to constitutional disturbance, the precursor of surgical fever, which, if amputation be not performed, either wears out the patient by hectic and exhaustion, or destroys life more rapidly by the toxæmic changes due to osteomyelitis or other sources of pyæmia.

Notwithstanding the danger of opening the knee-joint, it has long been resorted to as a surgical operation for the removal of foreign bodies, such as loose cartilages from its cavity; but the opening has been made in a valvular form, and with every precaution to exclude the air. It has, moreover, been found necessary to prepare the patient for this operation by rest and confinement to the bed or couch, for it has been observed that, when the operations were performed without taking these precautions, dangerous and even fatal inflammation has followed. Some surgeons, to avoid actually exposing the cavity of the joint to the chance of the entrance of air, have effected the removal of the cartilage by a double operation. The first fixing it by a sub-cutaneous incision to the parietes of the joint, the second performed after the first wound had healed, removing it altogether. In the so-called hydrops articuli of the knee, a form of chronic synovitis, the joint has been tapped like a hydrocele, and a solution of one part of tincture of iodine and four parts of water injected, with similar results to those with which the same method of treatment has been practised in hydrocele, the excitement of a moderate and modified form of inflammation, and the consequent absorption of the fluid.

The chief source of danger, however, appears to be the access of air, or perhaps, according to more recent views, not so much the air itself as the organic germs that pervade the air, and that if this can be avoided, the risk of destructive inflammatory change is much diminished. If such be the case, the use of carbolic acid, on the antiseptic principle, seems likely to be of service, and may render a wound of the knee-joint a less formidable accident than it has hitherto been considered.

That the method of treating effusions into the joints by [illegible] and the injection of [illegible] one we can [illegible] from the [illegible] of hydrocele, and it is fortunate that this particular agent, iodine, seems to have comparatively little tendency, even when exciting severe inflammation, to [illegible] suppuration. [illegible] that it is [illegible] with great [illegible] important organ [illegible] knee-joint, as I have had occasion to [illegible] My experience [illegible], enables me to speak with confidence of simple paracentesis of the joint in the treatment [illegible] inflammation, and [illegible] it is suitable [illegible] rapid relief [illegible] greatest [illegible] I have no hesitation [illegible] but it must be borne in mind that the [illegible] is to be performed with the greatest care, and that [illegible] taken to exclude the [illegible] I append notes of some cases in which I have tested [illegible] benefit, and in [illegible] I have not only [illegible] but recovery [illegible].

That the knee-joint may be opened and perfect recovery take place has been amply proved in many cases. Though such accidents, even when caused by sharp, cutting instruments, do in many cases give rise to flagrant inflammation, rapidly terminating in destruction of the joint and often of the patient. A wound of the cavity of the knee-joint must ever be regarded as an accident of the most serious character, and the prognosis of a doubtful character. It is satisfactory to know that, as in the cases here recorded, recovery may occur, and the joint retain its functions. Therefore, with whatever anxiety we regard a wound of the knee-joint, we know that it is our duty in the first instance to try, by careful management, rest, and the exclusion of air, to procure union of the wound, and obviate destructive inflammation of the articular cavity. It is not less important to keep a watchful eye on the patient's condition, that we may recognize and deal with the earliest symptoms of those inflammatory changes which, beginning insidiously, are apt to extend, and end in destruction of the joint.

CASE I.

Sharno, a Hindoo female, aged 32 years, was admitted on the 24th May, 1868, with sub-acute idiopathic synovitis of the left knee, of one month's duration. Had had gonorrhœa about three years prior to admission. At the time of admission, there was general fulness and swelling of the joint, with a good deal of pain, most troublesome at night. Fluctuation at the upper and outer part of the joint distinct. Patella quite loose, motion of the joint impaired; it was in a semi-flexed position. The limb was put up in a *M'Intyre's* splint. Bowels opened by a dose of castor oil, quinine and iodide of potassium in five grain doses, administered thrice daily, and a blister applied above the upper and outer part of the joint. On the 28th May, the knee was tapped at its upper and outer side with a small trocar and canula, and three ounces of sweet oil-coloured fluid let out, puncture sealed by guttapercha. A day or two after, the knee began to inflame, attended by febrile disturbance. On the morning of the 31st May, the knee having been swollen and painful, the guttapercha was removed, and the joint was again tapped in the same place, and six ounces of thin puriform fluid drawn. The canula was kept in for a time, and the discharge allowed to drain away freely. Since this opening has been made, the joint has gradually improved, the discharge diminished, swelling subsided, and wound had healed by the 22nd of January. In the course of the treatment, the patient had a large abscess at the upper and outer part of the left thigh, and a severe attack of diarrhœa; the former was opened, and the latter was checked by astringent mixture. From the day of tapping, that is, from the 28th May, up to 1st July, 1869, daily record of temperature and pulse were kept, the range of the former varying from 99 to 100° in the morning, to 102° in the evening, and that of the latter, from 84 to 116°. Internally quinine and iodide of potassium were given; subsequently astringents when she had diarrhœa, lastly ferruginous tonics. As regards external applications, cold lotions were applied during the existence of inflammatory symptoms after tapping, and subsequently when matter formed in the thigh, carbolic acid injection and dressing. The patient was discharged on the 15th October, 1868, much improved in health, but with the knee partially anchylosed, and some thickening about the joint; embrocations were ordered to be used freely.

CASE II.

Tajmahal Hossein, aged 28 years, policeman, admitted on the 24th [illegible], 1868, [illegible] and double hydrocele, of five years' duration. This was removed by surgical operation on the 29th of July, and he did well after the operation; the wound cicatrizing healthily, until the 16th September, when he began to complain of pain in the left knee. On the [illegible] both knee-joints were affected, and on the 18th, a collection of fluid had formed in the knee-joints. Purgatives [illegible] effusion [illegible] with [illegible]

was a little relieved, and under this treatment, the left knee remained stationary for a month, and was then discharged. The treatment of the other was not approved, and counter-irritation administered. On the 10th September, the swelling still remaining, and there being no fever, the right knee was tapped with a small trocar and canula, and nearly two ounces of yellowish and somewhat viscid fluid drawn off. The puncture was made valvular, and the opening having been carefully protected against the ingress of air, was covered by lint soaked in a solution of guttapercha in chloroform. The removal of this fluid gave great relief, and no unpleasant consequences followed.

On the 1st October, it is reported that "both knees are nearly well," neither fever nor inflammatory mischief followed. There was no reaccumulation of the fluid, and the swelling did not return. He continued to take the iodide of potas., and for some days the joint was kept at rest. Some stiffness and weakness of the joint that remained were gradually removed by friction with camphor liniment. He was discharged cured on the 5th January, 1869. The knee had perfectly recovered in November, but he was detained until the complete cicatrization of the operation wound, which was not complete until January, 1869.

CASE III.

Kalee Doss Sircar, a Bengalee, aged 32 years, was admitted on the 31st January, 1868, for pain, swelling, and impaired power of motion in the right knee, of four months' duration. For the last four years he had been subject to similar attacks, for which he had undergone a variety of treatment. There was no history of syphilis.

The joint was found to be distended with fluid, and was contracted. The limb was extended under chloroform, and placed on a splint, and the extension gradually maintained. Iodide of potassium was given, and blisters applied in the vicinity of the joint. Strapping of the knee was subsequently tried. He made slight improvement under this method of treatment, but soon fell back again. On the 2nd May, no real improvement having taken place, I tapped the knee-joint, and withdrew ʒviii of fluid of a thin sanguinolent appearance with flakes of lymph floating in it. The opening as in the first case was made valvular, and immediately closed against the access of air by lint soaked in guttapercha and chloroform. The knee was then placed at rest on a splint, and the iodide of potas. continued. The swelling and pain were much relieved by the operation, and on the 14th he could bear his weight on the limb, which had so long been completely crippled and contracted.

Some swelling still remaining, either from re-accumulation of more fluid, or some of the old not having been removed, I again, on the 26th, drew off about ʒviii more fluid just like the first. The wound was closed, and the same precautions observed as before. He was again relieved; neither pain nor inflammation followed. The knee was subsequently strapped. On the 7th June he was able to walk, and bend the knee in doing so. On the 27th June the strapping was removed, and camphorated oil rubbed in. On the 15th July, he was discharged; able to walk and much improved in all respects. The joint is still stiff, with some thickening of the surrounding tissues.

CASE IV.

K. C. Mookerjee, aged 30 years, was admitted on the 9th April, 1869, an opium eater, with chronic synovitis of the right knee. The iodide of potassium with his usual quantity of opium was prescribed. On the 10th the knee was tapped, and about four ounces of viscid puriform fluid drawn off. The wound was closed in the usual way, and the knee placed at rest on a splint. He was much relieved by the operation, and the improvement was permanent. On the 13th the joint was strapped. On the 17th he is reported as much better. On the 20th he was discharged cured. He is now nearly well, and walks without much difficulty.

CASE V.

Aboo Ali, a Mahomedan gaol, aged 26, admitted with synovitis of the left knee, and also in a slighter degree of the left ankle-joint. This came on about two months ago, after an attack of fever, and for which she had been treated with blisters before admission. The knee was much distended with fluid. There was little or no constitutional disturbance. On the 21st March, 1869, the day after admission, the joint was tapped on the inner side, and about eleven ounces of straw-colored fluid drawn off. The wound was closed in the usual way, the limb placed at rest on a splint, and lead lotion applied. There was no fever in the evening, but pain came on for a short time. On the 1st April the pain and swelling had subsided. On the 4th April the knee was strapped, and she has since been gradually recovering, having been somewhat thrown back by an attack of diarrhœa. She can walk fairly with the aid of a stick, and the swelling and pain in the knee are almost gone.

These cases all prove that the knee-joint may be punctured without severe inflammation being a necessary result, and that if a moderate degree of synovitis should happen, it may be subdued by ordinary phlogistic remedies and perfect rest. A certain amount of inflammation, indeed, seems to have the beneficial effect of so far modifying the condition of the synovial membrane as to prevent a re-secretion of the fluid.

It is with this object, as in hydrocele, that tincture of iodine has been recommended, and even used by some surgeons; but I confess I should feel no little anxiety in thus interfering with so delicate and important a cavity as that of the knee-joint. I should note that, in the closing of the puncture made into the joint in these cases, guttapercha dissolved in chloroform was used by saturating the lint applied over the wound, thus forming a protection through which no air could penetrate. The wound, if it did not immediately close, was subsequently dressed with carbolic acid in the usual way.

The result of these cases has been so far satisfactory as to encourage me to repeat the same treatment in future cases of synovitis.

In chronic effusions, no doubt it could be resorted to with the greatest impunity; but in acute synovitis it may equally be practiced, and with the greatest relief, although probably with more risk.

SELECTIONS FROM OPHTHALMIC PRACTICE.

By J. E. Scriven,

Professor, Calcutta Medical School.

Congenital Cataract.—The following three cases are, I think, worth recording, first, because congenital cataract, though by no means rare, is much less common than other forms, and secondly, because the variety about to be described seems to occur in England only in one eye. See Mr. Crichett's paper in the Royal London Ophthalmic Hospital Reports of May 1861, page 288.

If I be right in its identity, there certainly are exceptions to this rule in India, for, in these three cases, the cataract was in both eyes.

CASE I.

Ahmed Dean, a boy of this race, aged 12. (Hospital Register IV, page 10.) Entered the hospital on the right was said to be useful for ordinary purposes, though, from his earliest childhood, he could not see minute objects, such as needles, letters, &c., distinctly, without approximating them to within an inch of the eye. About five years previous

to admission, he began to find his vision getting worse: when he looked with the right eye, objects appeared double, though still distinctly defined. After about two and half months, objects became indistinct, the light of a candle appeared as if surrounded by stars, and, at last, the flame itself appeared as if divided into stars, and he could not see any distinct line of demarcation between the sunshine and shade. The left eye began to fail at the same time as the other, but for about five months the effect was that, to see minute objects, he had to squint more and more. At the end of the five months, however, this eye also became dim, so that he could see the circumference of objects, but not their centres.

When admitted on April 9th, 1867, both pupils acted well to light, but were each occupied by a dense white cataract. With the right eye he could see persons standing before him, but could not count the fingers: with the left eye he could count the fingers, and find his way about in the evening, though not in the day time. Both eyes were in a state of continual involuntary motion. There was no strabismus. When the pupils were dilated with atropine, he could count the fingers with the right eye, but he denied that there was any improvement in the left, with which, however, he was now found to have a very imperfect perception of some Persian letters, equal in size to about XL. Snellen: to examine these he brought them within three inches of the eye. The left eye was therefore the better of the two. The appearances, now that the pupils had been well dilated, were as follows, copied nearly verbatim from the case-book:—The right pupil was occupied by a dense, white, nearly circular body, which did not fill its entire area, but left a dark clearing around it: it was of a bluish white colour, the circumference being much more opaque than the centre, and a dense yellowish spot was observed just outside the centre, joining the circumferential part.

Beyond the white circular mass, very fine radiating lines could be seen, with concentrated light and a magnifying lens, extending from its margin into the clearing around it. The white body itself also appeared as if made up of radiating lines. The anterior chamber was very deep, probably from there being no lenticular substance. There was no perceptible tremor of the iris.

The left pupil was occupied, at its upper and inner side, by a dense white mass, becoming thinner and bluish at its upper part. A large crescent of clear pupil was left below. Two small dense white fragments were seen somewhat anterior in position to the larger mass. The anterior chamber was as deep as on the other side, and the iris of this eye (left) was tremulous. On the 12th of April I operated on the right eye, under chloroform. Two shouldered needles were introduced through the cornea, and the opaque mass that occupied the pupil was completely detached from its connexion. An opening was then made at the outer margin of the cornea, through which the canula forceps was introduced, and the membrane drawn out. Some small fragments remained, which were removed by a spoon. Considerable irritation followed, but, by the application of leeches, fomentations, and atropine, this gradually subsided, and he left the hospital, with considerably improved vision, on the 30th April, 1867.

In May, 1868, he came again, with the view of having the left eye operated on. In this eye, as the opacity extended right up to the upper margin of the dilated pupil, and probably under the iris, I was afraid to adopt the same proceeding as in the other, lest I should fail to remove the whole of it. Chloroform having been administered, I therefore proceeded in the ordinary method of scoop extraction, making the upper section, about one-fourth of the circumference of the cornea, and removing a portion of iris; I then passed the point of the pricker round the opaque body, in order to separate it from its connexions, and afterwards introduced Bowman's scoop behind it. I was surprised to find that only the posterior capsule came away. The anterior capsule which remained, I drew out with the iris forceps. There was evidently no lenticular substance. No vitreous escaped. The pupil now remained perfectly clear.

A little pain and irritation followed this operation, and was subdued by the same remedies as before. The corneal wound healed favourably. On the 13th of July it is noted that this man had a perfect recognition of persons, with both eyes, tried separately. Could distinguish the individual features, but said there was a slight mistiness of the left eye. The involuntary movement of the eye balls remained, but nearly ceased when he looked at any object.

With the right eye he could read No. XX. Snellen at seven inches, with the left at five inches; with No. 4 convex glasses he could read the same type at thirty-two inches, and ordinary Persian type at five inches and a half; for this purpose he used the right eye, but when this was closed, read the Persian type with the left eye at a three inches and a half.*

He was discharged on the 14th of July. He came again in November for a pair of spectacles, which I had procured for him from England. Both pupils were quite clear, and the vision continued as at the time of his discharge; the involuntary movements of the eye had greatly diminished.

Thus the eye, which originally had least vision, became the best after operation, because, I imagine, the pupil was central and intact.

CASE II.

Dewee Dial, aged 24, (Hospital Register XIII, page 199.) admitted on January 18th, 1869, on account of excessive distension of the left eye with fluid, which rendered the cornea very prominent, and had altered the shape of the whole eye-ball. This was of about six months' duration, but it was obvious that, in both eyes, there was a dense opaque capsule, occupying the inner half of each pupil. The depth of the anterior chamber of the left eye was fully half an inch, and both iris and lens were tremulous. The right eye had a decided internal strabismus.

It was found that there was very little difference between the vision of the left and right eye. He could see the hand in front of him, but could not count the fingers. The left (distended eye) was slightly more misty than the right. He said that his vision had been the same as long as he could remember, but he now complained of pain and smarting in the left eye, which induced him to come to hospital.

Both eyes were in a state of continual involuntary movement, and there was a good deal of photophobia, in consequence of which examination was exceedingly difficult.

A section of the cornea was made in the left eye, with the view of relieving the tension, removing a portion of iris, and extracting the cataract. Bleeding, however, came on from the fundus of the eye as soon as the section was completed, and nothing further could be done.

CASE III.

Allayar, aged 30, (Out-patient Book, March 6th, 1869). Blind from birth.

With the right eye he could barely count the fingers; with the left eye he could not do so. Had slight internal strabismus, sometimes of one eye, sometimes of the other. Eyeballs in perpetual motion. Pupils acted well. On dilating them with atropine, the following appearances were noted:—

The anterior chamber in both eyes was very deep. The cataract in the right eye consisted of densely white capsule, occupying the greater part of the area of the pupil, but leaving a narrow crescent below. This crescent was comparatively clear, yet appeared to have a thin membrane, like a bit of gauze, at one spot in its inner half, marked with several small white specks.

* On several occasions by mistake a person, it was found that they could not read the [illegible] vision; and I soon found that it [illegible] had [illegible] internal strabismus of the left eye, the [illegible] counting [illegible] account, used to [illegible].

membrane, that, at certain points, joined the outer capsular ring.

slight tremor was noticed in this cataract.

The anterior chamber in the left eye was equally deep, the cataract occupied the whole pupillary area, and appeared to

Altogether below this, and near the lower margin of the pupil, there was a slit in the membrane, passing across that part of the pupillary area, and turning up on both sides. Below this

It was impossible to find out how much this man's vision was improved by the atropine, as he was very unwilling to give any information on the subject, lest further treatment should be pro-

that nothing could be done for a man that had been born blind.

The following sketch, made at the time, will give some idea of



Right eye.



Left eye.

All these three cases had the same kind of cataract, that is to say, membranous, with little or no lenticular substance; all had the same oscillation of the eyeballs, and a similar increased depth of the anterior chamber. Cases 2 and 3 had been practically blind from birth. Case 1, Ahmed Deen, for the first 16 years of his life had tolerable vision, but there is no doubt that the disease was congenital in him as well as in the others.

A very interesting question, however, arises here, *viz.*, what was the condition of this man's eyes during these 16 years? for then he was practically blind; whereas, formerly, he could

conscious of a defect; he was obliged to "squint" in order to examine minute objects. It appears that this squinting gradually increased, and that he first became aware of positive disorder of vision in the right eye, by the occurrence of uniocular diplopia, followed by division of the candle flame into stars, and, in the left, by a clouding of the centres of objects. This history suggests a central opacity in each lens, more dense in the left, accompanied possibly by some original deficiency, though not total absence of lenticular substance.

In the total absence of lenticular substance, the man could he possessed, and yet, when he was operated on, there certainly was none in either eye.

It seems, therefore, most likely that a small central opacity existed from birth, and that it gradually increased, at the expense of the lenticular substance, till blindness was the result.

illustrates it pretty fully. The most essential point is *complete* removal, and that mode of procedure is the best, which most surely effects it. Any fragment that remains (and these cataracts have a great tendency to break up into fragments) certainly sets up iritis of a very unmanageable kind. Whether the opera-

be adopted, depends upon the case, and ought to be well weighed by the practitioner beforehand.

Some of these patients probably have also congenital imper-

expect. The doubt that must necessarily exist upon this point.

N

ON LUNAR INFLUENCE OVER MALARIOUS FEVERS.

By W. J. M——, L.R.C.P.,

S——n, Bengal Presidency.

A

that malarious diseases, affections of the eye, and rheumatism are thus aggravated, especially in tropical climates, remained, and

influence in fevers, it is too plainly perceptible within the tropics to admit of doubt." In 1839, the late Dr. Murray, of Bombay, published "cases illustrative of the influence of

Dr. Wise, formerly of Calcutta, remarked: "the moon may be

be on that point, I am persuaded by close observation of this

familiar to both patients and medical men in India."

Sir Ranald Martin

Day, of Madras, in an able statistical paper on tropical fevers, arrives at the conclusion that there is a sub-lunar influence which is greater at the equinoctial period than in the respective intervals. Mr. Day, moreover, states that severity

ten years' observation, I thus expressed my own opinion: "Indeed, a very short practice in the tropics will convince the most sceptical, that individuals who have suffered from

of the moon. Many experience return of fever at these times, other feelings of uneasiness or *malaise*, but not amounting to actual ague, and this predisposition to become periodically affected may remain for months, or even years, and may recur at uncertain periods, the intervals being passed in perfect health." Lastly, Dr. Peet, who, in 1843, published a *resumé* of the subject, besides mentioning several of the various author's opinions as above referred to, quotes also, "report on the diseases of the Indus Flotilla," by Mr. Floyd; "a statistical report on Sukkur," by Mr. Jephson; another report on Sukkur, by Mr. Edwards: a report on the 16th Regiment, by Assistant-Surgeon Dhean; Dr. Bankier's work on cholera: Dr. Murray's account of the Mahableswar Hills; in all of which evidence in favour of lunar influence is stated to be forthcoming. Dr. Peet also mentions that, in 1839, the following conclusion was drawn from cases watched at the European General Hospital of Bombay: "that, in intermittent fever, a modification of the symptoms, chiefly by exacerbations, does occasionally take place about the period of the principal lunar alternations." Thus, it must be admitted that, however ridiculous the subject may to some minds appear, there must be at least some cause for a belief so common among the general public, and shared more or less firmly by so many eminent members of the medical profession.

But, as a matter of course, the supposed lunar influence on malarious disease has not been permitted to remain without contradiction and doubts. Dr. Peet informs us, the first attempt to decide the question by proof was made by Dr. Stokes, of Dublin. But the fevers watched were the famine or relapsing fevers of 1817. These Irish statistics, therefore, neither relating to malarious disease nor to tropical climates, may be regarded as worthless. In a report drawn up by order of the Madras Government, respecting the fever prevailing in 1809-11, the authors remark: "with regard to the moon producing relapses of fever we cannot speak with much confidence." But the most telling material brought forward by Dr. Peet is a statistical table, arranged by the late Assistant-Surgeon Cruickshanks, of cases of malarious fever occurring in China, the conclusion being, that neither in the first attacks nor relapses does the moon seem to have exerted any perceptible influence. On this negative evidence, which would certainly appear weak in comparision with the wide-spread belief, Dr. Peet, in 1843, decided against the influence of the moon, and more than twenty years afterwards reiterates his opinion.

But, notwithstanding Dr. Peet's able enquiry into the subject in 1843, the impression that lunar phases influence certain forms of disease remained much as before. This is evidenced by the later writings of Martin, Moorhead, Day, myself, and others, previously quoted. And among the general public, especially among Anglo-Indians, the belief even became more confirmed. Among natives of the better class also the idea extensively prevailed. Accordingly, with the view of authoritatively deciding the question, His Excellency Sir W. Mansfield, when Commander-in-Chief of Bombay in 1860, directed that records of paroxysms should be kept in every medical charge in the presidency. At the end of the year, records of 56,175 paroxysms were made to Dr. Girand for report. The conclusion arrived at by this officer, was a balance of 648 against the theory of lunar influence.

Dr. Girand, moreover, proceeds to argue that, as the once reputed influence of the moon on plague, asthma, insanity, periodical hemorrhages, and cholera, is not now entertained, the idea of connection between lunar phases and malarious fevers, should also be discarded. As exemplifying the strength of popular fallacies, he remarks that, although the astronomers Arago and Airy deny any connection between the lunar phase and the weather, people still predicate changes from the moon's age, because they habitually connect the latter with fever. The springs are said to be noted periods, and therefore the recurrence of fever at such times is presumed to be more recolleeted than when it happens on other days. Hence the popular belief. The following simile is also given. People in Bombay generally entertained the idea that the English mail came in oftener on a Sunday than any other day, simply because Sunday being a marked day its events were more noticed. Lastly, Dr. Girand quotes Bacon, to the effect that "men mark events where they are fulfilled; but where they fail, though this happens much oftener, neglect and pass them by."

But Dr. Girand's ingenious arguments did not suffice to prevent objections being advanced to both the statistics, and to the manner in which they were manipulated. While some observers classed all their cases of intermittent fever under the head *primary attacks*, others classed theirs as *secondary*, the latter only being supposed to be influenced by lunar agencies. The statistics were almost entirely formed from cases among soldiers, in whom debauch, exposure, fatigue, or other conditions incidental to military life, must often times have induced recurrence of paroxysm. Also the practice of administering quinine as a prophylactic was more prevalent than now, and this must, if there be any truth in the generally accepted opinion regarding the powers of quina, have interfered with the natural periodicity of the disease. Lastly, Dr. Girand made the periods of the springs to extend from two days before to two days after the date of the new and full moon. Thus, ten days in each month was assumed as the time in which lunar influence exists. But it was objected that this interval is too long, and that 36 hours should have been the limit.

Under these circumstances, the belief in lunar influence remained pretty much as before among the non-professional public; and, as far as I am aware, few medical men, previously admitting lunar agency, changed their opinions on the subject. Holding in mind the many disturbing agencies in operation against all statistical evidence on the point, individual testimony must be regarded with respect, and of this we may meet with instances almost daily. My attention has long been directed to the matter, and, on first arriving in India, no one was more incredulous. Observations of individual cases soon, however, changed my opinions, and, as I wrote in 1862, "practice in the tropics will convince the most sceptical that individuals who have suffered from malarious fevers are more or less affected at the full and change of the moon." So I now believe; and this, notwithstanding that my own statistics, now recorded, do not support my views. As officiating general superintendent of the Raj Dispensaries in Rajpootana, I asked for and received* daily records of fever cases from twenty-six institutions for six months, and from twenty-four for the whole year 1868. Reports from several dispensaries were not included, as I felt some doubts regarding their correctness. The total number of cases recorded is 15,973. From enquiries, which need not be here detailed, I have reason to think that 80 per cent. of the natives of India suffer from one or other variety of malarious fever before the age of puberty, or say 15 years. The number of children presenting at the dispensaries was 20 per cent. to the total treated. It is therefore obvious that the great majority of the fever cases reported must have occurred in adults, and were, therefore, *secondary attacks*, or paroxysms coming under that description (afterwards more particularly referred to), not due to malaria, but to atmospheric vicissitudes consequent on lunar changes exciting malaria, already present in the system, into renewed action. But an examination of the daily statements for twelve months shows that no connection is to be traced between the phases of the moon, and the greater prevalence of

* I take the opportunity of expressing my obligations to the Medical Officers who responded to the circular requiring the returns, namely, Dr Hayes, Beawar; Dr. Bain, Jeypore; Dr. Cunningham, Oodeypore; Dr. Kaye, Jeypore.

REMARKS ON CYST-INFECTED MEAT AT MEEAN MEER, ITS NATURE AND PREVENTION.

By J. Fleming, M.D., F.R.C.S.,

pecuniary loss to Government, and a serious injury to the public

have been quite free from cysts. For the month of January,

giving a percentage of 27·29. Therefore, the total number

Government, not including other expenses, of Rs. 3,944. From

is likely that the numbers found cyst-infected will vary inversely

Commissariat Officer informs me that the cattle purchased from every

in length, while the enclosed invaginated worm, when protruded

by the unaided eye.

There is some little difference, perhaps, worth mentioning

work on Entozoa, and the specimens from the beef in this station which I have examined. In these latter there is a central apparently sucking disc, situated between the four large discs,

but, I believe, they are really the same, and the different ap-

book. The same remarks are applicable to the drawing of taenia

living state with the food, they become developed into mature

nature. Upwards of a hundred cases are recorded, both in our

of the tape-worm has infested the human body, and caused death; and there is reason to believe that many cases returned as "died from natural causes" may have been owing to the development of immature taenia in the brain, or in some vital organ.

fatally, can be distinctly traced to tape-worms, and many instances are on record where the expulsion of the worm from the intestines was followed by a complete cure of epileptic convul-

even one, is sure to cause death, and a cure at present is beyond

amount of distress that, from their nature, can readily be imagined, and Continental observers who usually lead the way in investiga-

toms for their diagnosis, ending with mania or imbecility. The development of the cysticercus taenia mediocanellata in cattle cannot add to the nutritious value of the meat, but rather

abominable disease in man.

The importance of a subject which bears such a direct reference to the health and well-being of a European and Native population is very plain, and should induce steps to be taken to prevent a disease which naturally tends to increase rather

Russia, and Abyssinia, affords us practical lessons, from which we should profit in a great measure. It is reported that in Iceland one-sixth of the deaths of the population is caused by the scolex of a tape-worm which infests the dogs, and even in this station it is most remarkable to see the great number of slaughtered cattle, otherwise apparently healthy, whose livers and lungs especially are disorganised by masses of these immature tape-worms. The hydatid disease, as the latter is called, is not very common amongst soldiers in this country, but it is sometimes observed; I should expect it, however, to be common amongst the native population, considering the relatively very great number of dogs to be found in the Indian villages, and it is certainly common amongst cattle and sheep. From what we know of the wanderings, life changes, and development of this class of parasites; and that knowledge is not a theory, but the result of actual experiment and observation,

definite, which, if properly carried out, would have the effect

Tape-worms, whether they occur in the mature or immature forms in man or animals, especially epidemic, cannot be looked on in any other light than indices of bad sanitation in the towns or districts where they are prevalent. I will not say that the sanitary condition of the villages and towns of the Punjab is inferior and more neglected than other parts of India; but I cannot avoid stating that the condition of some of the villages in the Punjab, through which I have passed, is a disgrace to any executive, professing to have for its object the care and welfare of the population. To anyone who has the courage to examine the interior and outskirts of some villages, it will be apparent that the most ordinary rules of sanitary

of the day, men, women, and children obeying the calls of nature in every possible direction, usually close to some pond, which is near every village; and cattle coming to drink and roll in the pond, which probably already contains, in its water

then, is the true source from which cattle become cyst infected, whether they receive the eggs from the water or grass; since the human body is the host for the mature parasite. If an enquiry should be instituted, I would expect to find full-grown tape-worms amongst the population in the towns and districts which furnish cyst-infected cattle, and there also a particularity in the water used by the latter.

As our knowledge of the natural history of this class of parasites or entozoa is tolerably perfect, it enables us to suggest plans for their destruction, before they arrive at the cysticercus stage—

First.—Find out the districts which supply the cyst-infected cattle, and let there be a thorough examination for tape-worm amongst the inhabitants of those districts.

The mature worms, when found, should be expelled from their hosts by some powerful anthelmintic medicine, and the ova destroyed.

This plan, if properly carried out, would be most successful, and the propagation of the disease would thereby be entirely prevented.

Second.—Examine microscopically the water, &c., of those infected districts, for the ova of the tape-worm, so that, if it is found to contain them, it should be avoided when practicable.

Third.—Establish a system of latrines in every village, under the superintendance of the chief zemindar, who should be accountable for the general sanitary condition of the whole neighbourhood. By such a plan, at all events, attended with little or no expense, there would be less tendency for the ova to pass into the water or food used by the cattle, or to be washed by the rains over the whole district; but, on the contrary, the ova would be localized, and, perhaps, be destroyed in a short time by slight decomposition.

It has been suggested to organize cattle farms under the management of the Government, and thus insure a supply of good, well-fed cattle for the use of the troops; but it might be rather difficult to carry out, and would certainly be attended with great expense, besides checking, in some degree, the trade of the country, and preventing local enterprise. Neither would such a system produce now cyst-infected cattle, if the sanitary arrangements already proposed were to be neglected.

REPORT ON THE MEANS ADOPTED TO STAMP OUT SMALL-POX AT UMBALLA, 1869.

By Surgeon J. E. Tyson, M.D., F.R.C.S.,

Officiating Staff Surgeon.

The following [illegible] were adopted at Umballa, during the time that small-pox was raging at Delhi, and other surrounding stations, and I am induced to bring forward the subject, as it appears to me that the suggestions made by Sir James Simpson, to stamp out small-pox on its first appearance, are most important.

I think the results of the precaution adopted at Umballa are as instructive and interesting as the results were satisfactory, [illegible] and a fatal disease may in a measure be warded off, if not eradicated.

When the disease threatened to become epidemic in the station, I instituted the following arrangements, and by personal supervision took care that they were efficiently carried out, and, with the aid of [illegible] assistants, the duty was efficiently performed. The disease never gained ascendancy, and although [illegible] cases occurred, still it never became [illegible], which was the object I was most anxious to attain.

1st.—Carefully segregating patients affected.

2nd.—Disinfecting the houses where small-pox patients were taken from, with sulphurous acid, McDougall's powder, and by relaying floors.

3rd.—Instituting vaccination throughout cantonments, officer's compounds and those of other residents, and having a staff of vaccinators to operate through the Melelee Bazaar. All children and adults were vaccinated without delay, who were in an unprotected state.

4th.—All patients affected with the disease were at once conveyed to the Small-pox Hospital, and those patients belonging to different regiments were carefully kept apart in tents, and no intercommunication allowed.

I would wish to draw attention to the beneficial influence that McDougall's powder exercised by sprinkling it on the floor of the Hospital, and also on the patient's bedding and clothes. All bad smell was avoided, and the patients appeared to me to recover quickly.

CASES FROM PRACTICE.

CLINICAL NOTES OF CASES RECENTLY TREATED IN THE GENERAL HOSPITAL, CALCUTTA.

By W. J. Palmer, M.D., F.R.C.S.L.,

First Assistant, Presidency General Hospital.

In these days, when so much intellectual energy is expended on the study of what is called the "natural history of disease," when the more obtruse details of chemical and spectroscopical analysis are rigorously applied to the discovery of alterations in the fluids of the body, both healthy and diseased; when the highest magnifying powers of our microscopes are zealously applied to unravel minute pathological changes; and again when the thermometer, the ophthalmoscope, sphygmograph, the laryngoscope, &c., &c., are rapidly becoming recognised as aids to correct diagnosis, not less necessary to us in our day than the stethescope was to our fathers, it is not surprising that the one great end of all our learning, *viz.*, the cure of disease, or the alleviation of suffering, should appear to be somewhat overlooked and forgotten; a visit, however, to the wards of our hospitals will suffice to reveal that many new and valuable discoveries are constantly being made and applied to the treatment of disease, and also afford strong evidence that therapeutics is not less successfully pursued than any other branch of medical study. A few examples in illustration may not be considered unworthy of publication.

Bromine and the bromides were scarcely known as therapeutic agents, until the last few years, during which time bromide of potassium has gained a great reputation as a nervine sedative, its marvellous influence in some forms of epilepsy has been amply discussed, and fully brought to notice, but very recently the curative effects of this salt, in cases of delirium tremens or acute alcoholism, have appeared so marked and worthy of observation, that I am desirous of bringing to notice the results of its action on some cases of [illegible] treated in this hospital, during the past few months.

The first case was that of a well-built muscular young man; he was brought to hospital early one morning in February, in such a violent condition, that it was considered advisable to place him at once in a room fitted with iron-bar-doors, which is kept for such patients. He shouted and screamed incessantly; tore the clothes on his back into tatters, and broke every breakable article within his reach; his arms, face, and legs soon became bruised and excoriated by rough contact against the bars of the doors; in short, he behaved generally in as wild a manner as it ever was. He could [illegible] time to almost any music, and has a keen sense of the ridiculous [illegible] eye and voice, but he again relapsed into his former wild and unmanageable condition.

His medical history was never made out quite satisfactorily, there was reason to believe that he was not long in the habit of indulging to excess habitually, but having become suddenly bereaved by misfortune, he had drunk deeply for [illegible] cares.

In addition to the usual treatment of [illegible] he was

bromide did not become apparent until thirty-six hours after [illegible] to tranquility until the third day.

Of the remaining eight cases treated, only two others were as severe as the above two; the beneficial and sedative effects of the remedy were seldom so rapidly developed as in the first [illegible] of this kind, it is scarcely possible to find any precise similarity in the effects of remedies; for the continued use of alcohol leads, in many persons at least, to increased tolerance of it. There is reason to believe that the subject of the second case above quoted, had been in the habit of indulging freely in large quantities of brandy for a long time previous to his admission; so that he was suffering, not merely from undue excitability of his nervous system, but all the functions of his body had become thoroughly deranged, his excreting and secreting glands were also more or less disorganised; hence there was great difficulty, on the one hand, in eliminating the poisoning spirit and absorbing the remedy, and on the other, in preparing new processes of digestion and nutrition.

The remaining eight cases treated were variously influenced by the remedy, according as the disease was like that presented in case I or II above quoted, but in all of them its beneficial effect appeared to me to be so far superior to that of any other remedy, that I hope others may be induced to give it a fair trial, and make the results of their observations known. The [illegible] appears to be essential to the success of the treatment.

2. The beneficial effects of belladonna where large doses of opium have been taken:—

A young man was brought from one of the ships in the river [illegible] A.M. on the 8th April, suffering from all the usual effects of poisoning by opium. It was reported that he had taken about two ounces of laudanum three hours before; he had been kept from sleeping hitherto by constant walking up and down the deck, and frequent dashing with cold water; when, however, these no longer sufficed to keep him awake, he was brought to the hospital. No satisfactory evidence could be obtained whether [illegible] had; still, however, he was so much under the influence of the narcotic, that it was scarcely possible to rouse him by the combined influence of brisk walking, flicking with a wet towel, and splashing with cold water. What was the proper treatment in this case? Neither emetics nor the stomach-pump could have been of much service, for all the laudanum must have long ago been absorbed into the system; for the same reason no [illegible] A brisk saline purgative was given immediately, but any good it might effect could not take place for some hours. The [illegible] effects antagonistic to those of opium; until the opposite effects [illegible] was known than strong coffee. The following details appear to afford valuable evidence of the usefulness of belladonna in these [illegible] It was [illegible] of belladonna in the hospital was good, three doses of a quarter [illegible] fauces and wide dilation of the pupils in a patient to whom it was given, therefore a quarter of a grain was ordered to be given to our present patient immediately, and to be repeated [illegible] above alluded to were also continued. After four doses of the belladonna had been administered, the patient appeared better, he still fell asleep while trying to answer a question put to him, and his pupils were mere pin-holes in appearance; it was, however, thought advisable to give the medicine hourly [illegible] of every half hour. He [illegible] walk about and keep himself awake. By 9 P.M., all sleepiness [illegible] patient was allowed to go to bed. He had now, however, so far regained control over himself, that he continued to walk about voluntarily until half-past ten o'clock. He was purged very freely through the night, but slept between times, and the next morning he appeared quite well again, the pupils having recovered their normal size. He remained under observation two days more, and then left the hospital perfectly recovered.

3. Two cases have lately been under treatment, which illustrate the great advantage of enucleating an eye which has become blind from injury, to prevent total blindness.

The frequent occurrence of what is called sympathetic inflammation in the second eye, after one has been injured, has been observed for many years; the removal of foreign bodies or of a degenerated lens from the blind eye, with the object of relieving the secondary inflammation and saving the other, has also been recommended and performed, but the great importance of removing a blind eye as soon as the other becomes in any way affected, has only been quite recently admitted; that is to say, until very lately it was not clearly perceived, that the degenerative changes which occur in an injured eye almost always lead in some subtle way, not well understood even now, to destructive disease in the sound eye, and further that prompt removal of the useless organ affords immediate relief to this disease.

[illegible] to cause it to be postponed to the latest possible moment; the modern one, however, of enucleation or letting the eye-ball slip out of its socket, by dividing successively the mucous membrane, the muscles, and the optic nerve, is so simple and [illegible] blind and useless eye is done away with.

Ophthalmologists who have paid much attention to this sympathetic disease, recommend that an injured eye should be removed the moment there is evidence that it cannot again [illegible] considered extreme doctrine, there can, I think, be no doubt [illegible]

Case I.—A well-formed, healthy engine-driver received a blow on his left eye in April, 1868; this caused severe inflammation and ultimate complete loss of sight. In December, the second or right eye became inflamed; from this time till April, 1869, he suffered from frequent attacks of severe pain in both eyes, with more or less inflammation in the right; he now applied, and was admitted into hospital suffering from severe pain, and a considerable amount of inflammation in all the tissues of each eye. Temporary relief was obtained by the ordinary treatment; but the swelling and suffering recurred with still greater severity. Eventually, the left eye was enucleated; the severe frontal and ocular pain ceased immediately, and as the chemosis of the other eye subsided, his cornea was seen to be ulcerated from the arrest of nutrition caused by the inflamed state of the mucous conjunction, but the iris acted freely, and his sight is improving daily.

Case II.—The relief afforded in the other case was still more remarkable; the anxiety and apprehension on the part of the patient, lest he should become quite blind, appears to give place to rest and cheerfulness as soon as the operation is performed; the very day after the operation, both patients seemed to consider it their greatest trouble that they were not allowed to go about the wards in the light amongst other patients.

[illegible] Whenever the bladder fails to empty itself completely either from inefficient contractile power in itself, as seen in cases of spinal injury and disease, or from any impediment in the passages of exit, as the various forms of urethral stricture, the unduly retained urine, being in the presence of mucus and other putrescible matter, suffers decomposition; its urea, by a simple transposition of its molecules and absorption of water, becomes carbonate of ammonia, thus:—

$$C\,H_4\,N_2\,O_2 + 2\,H_2\,O = (N\,H_4)_2\,C\,O_3$$

[illegible] surface of the bladder; it thus gives rise to increased blood supply, and formation of cells, which, however, are not gradually built up into the normal scaly epithelium, but are hurriedly thrown off in the form of pus-cells, constituting that trouble-

some complication of paraplegia and stricture, called purulent-urine.

Till within the last few years, the tedious and troublesome process of washing out the bladder daily with weak acids, by means of the double catheter, was the most effectual known mode of treating these cases. A real improvement in the treatment was made, when chemists proclaimed that benzoic acid given by the stomach was converted into hippuric acid while passing through the system, and also that this acid was excreted through the bladder; this indirect supply of acid to the urine was found to be much more effectual in preventing the formation of pus than any mineral acid previously given had been; still, however, it was only in very mild cases that it controlled the formation of pus entirely: some more powerful remedy was still a desideratum, and this has, within the past year, been found in the alkaline hyposulphites. The first case in which I had an opportunity of observing this treatment was so remarkably striking, that it is worthy of mention here, though it occurred in London. An old man, who had been paraplegic for years, was nearly worn out from bed-sores, and the constant drain of from six to ten ounces of pus from the bladder daily. Half a dram of hyposulphite of soda was administered to him every three hours; after continuing this for six days, his urine became clear, and quite free from pus or putrescence. This result appeared so marvellous as to be scarcely credible; the urine, however, continued to be free from pus; the remedy was now stopped, and after four days there was again as much pus in the urine as ever. This appeared to be good evidence that the remedy had caused its disappearance in the first instance; if its re-administration again arrested the formation of pus, this evidence would be conclusive. Similar doses were then again ordered and with similar results, *viz.*, a total disappearance of pus after four days. The patient was too near death to be materially improved by this treatment, still it would appear that, if the remedy had been administered at an earlier stage, his life must have been prolonged.

No case so favourable for trial as this has occurred in the general hospital. One man, however, was admitted in January last, suffering from three strictures in different parts of his urethra; these caused so much impediment to the passage of urine, that pus was formed in the bladder to the extent of from four to six ounces daily. Half-drachm doses of hyposulphite of soda were given to him every three hours, and the strictures were treated by gradual dilatation. The amount of pus in the urine decreased rapidly, in five days it had entirely disappeared, though it was six weeks before the patient made a perfectly free stream of urine. What is the *rationale* of this treatment?

The researches of Pasteur and others have shewn, within the last few years, that a drop of sulphurous acid would cause the immediate arrest of fermentation taking place in a mixture of yeast and sugar. If this particular kind of fermentative action is so suddenly arrested, it is not improbable that other kinds are also similarly prevented. It was previously known that although a pure solution of urea in water would not form carbonate of ammonia, yet if a little mucus or other putrescible matter were present, this decomposition would take place. In urine, whether inside the bladder or out of it, putrescible mucus is at all times present and ready to initiate the ammoniacal fermentation unless prevented; it therefore appears that the presence of sulphurous acid, or a hyposulphite, in the urine is sufficient to arrest this action. All who have experienced the tediousness and inadequate results of the old mode of treating these cases, will be able to appreciate the great advantage of such an addition as this to our therapeutic agents.

CYSTIC TUMOUR OF THE LEFT LABIUM.

By Dr. Hutchinson,
Civil Surgeon, Patna.

Gobeeun, a prostitute, applied for relief at the dispensary early last month. States that, a year ago, she suffered from primary syphilis, and was cured. Three months ago she first noticed a swelling of the left labium, to which her attention was drawn by the intolerable itching, and for it she was leeched and cupped, but without benefit. She then applied to the dispensary, and the sub-assistant surgeon, diagnosing elephantiasis of the labium, treated her with iodine applications.

On seeing the case, there was certainly from the appearance of the tumour, which was about the size of a hen's egg, a ground for the idea about elephantiasis; but on careful examination, I detected fluctuation, and passing an exploring needle, let out two ounces of an extraordinary fluid, exactly like mucilage and gum, a glairy fluid of a rich brown colour, and irritating withal, for my hand sensibly smarted under its influence. The microscope revealed nothing but pigment granules with a few epithelial cells here and there: whence came the strange colour of this secretion? I thought it might be a disorganised hæmatocele, but certainly never heard of the brown colour being assumed. Was the colour due to an abnormal collection of the ordinary pigment of the skin? if so, why should so strange a locality be chosen for the freak. I confess I am nonplussed and unable to explain the phenomenon.

ELEPHANTIASIS OF THE BIG TOE, LEFT FOOT.

Lal Behari Koormee states that, four years ago, he noticed a pea-like swelling on the lower aspect of the toe; this gradually and steadily increased until it has attained the present dimensions, which are those of a child's head, the circumference of the mass being 15½ inches. The leg rests upon the heel; and the tumour, the lower aspect of which is tender and vascular, bleeding freely on any irritation. As the cellular tissue of the big toe alone was involved, I removed the mass with the two phalanges, and finding sufficient material for flaps, did not cut through the head of the metatarsal bone. The tumour weighed 25 oz.

DEATH CAUSED BY SWALLOWING NATIVE TOOTH-STICK.

By G. A. Watson, Esq.,
19th Bengal Cavalry.

The following case is interesting, as showing the careless way in which natives sometimes clean their teeth, as well as the necessity of proper precautions being taken in selecting the wood, from which their tooth-brushes are made. In this instance, the man was not content with scrubbing his teeth and tongue with his dantum, but was in the habit of thrusting it back into the pharynx, in order to clear away any phlegm that might have collected there, and to excite the act of coughing to clear his larynx. The wood generally preferred by natives for cleaning their teeth is the root of the peeloo (salvadora), or branches of the babar, or neem tree, but when these are not at hand, almost any tree that may be most readily procurable is made use of. In the following case a branch of the common willow was used, the wood of which is very brittle.


*

Jhunda Singh, Sowar, 19th Bengal Cavalry, aged 23, came to hospital on 23rd July, stating that, whilst cleaning his teeth with a piece of wood, it had broken in his mouth, and that he had swallowed a portion of it. At first he complained of some difficulty in swallowing, but it was evident that the wood had passed into the stomach, and on the following day, as he appeared to be suffering no inconvenience from it, he was discharged to duty. On August 15th, he was re-admitted into hospital suffering from fever, and complaining of pain in the right hypochondrium. When questioned about the piece of wood, he did not attribute his present sufferings in any way to it, but said that he had digested it, "hazm hogaya." He continued to suffer from fever, together with increased pain and tenderness over the region of the liver, and a tympanitic condition of the bowels, until the 28th August, when decided symptoms of jaundice showed themselves. On September 6th, the tenderness over the liver was much increased and a distinct hardness and slight swelling was felt there. During the same day he passed a large quantity of blood from the bowels, and he died at 6 A.M., on the 7th September, forty-six days after he had swallowed the piece of wood.

A *post-mortem* examination was made, and a piece of stick of the willow, six inches in length, and about one-fourth inch in diameter, was found lodged in the duodenum, one end of it was projecting through the coat of the duodenum into the under-surface of the liver. The liver was inflamed, and some puru-

* Reduced to one-fourth of the original size.

ABSCESS OF THE SPLEEN

BY A. [illegible] Surgeon [illegible]

A [illegible] without being ill or inconvenienced. The general health improved much after the evacuation of the abscess, and the patient [illegible]

PASSAGE OF A CALCULUS FROM THE FEMALE BLADDER

[illegible] and difficulty of micturition for the last seven years; symptoms had become more urgent of late, and she had [illegible] Dispensary that she had passed a large stone while straining at [illegible] 1 inch deep in centre, tapering abruptly at each end, where the [illegible]

GUINEA WORM TREATED BY THE LOCAL APPLICATION OF CARBOLIC ACID

By J. M. [illegible] M.D

Civil Surgeon, Khoondwa

Sixty patients suffering from the presence of this trouble- [illegible] Khoondwa Dispensary, by the local application of carbolic acid. [illegible] second application.

[illegible] out in this way in the first day, which are then rolled up in the usual manner, and protected against injury by a piece of [illegible] the whole has been extracted.

[illegible] vitality of the dracunculus, which becomes white and opaque, [illegible] It is [illegible] that the consequence of breaking, which happened in one or [illegible] evidently counteracting the usual injurious results.

[illegible] give only the two following, in the first of which a dracunculus, [illegible] cation; and in the other, four dracunculi were extracted from the same individual, one at the first application, another at the [illegible]

[illegible] complaining of a soft fluctuating swelling above the left ankle. [illegible] touched with carbolic acid and gradually extracted to the extent of 4 feet 8 inches. The rest being firm, this portion was tied with a thread, and cut off.

28th October.—Came back this morning, carbolic acid again [illegible] drawn out, total length 5 feet 3 inches.

[illegible]

25th June, 1868.—Admitted with rheumatism and guinea- [illegible] watery discharge issuing from two small openings.

27th.—The extremity of a guinea-worm visible at each opening. Worm No. 1 touched with carbolic acid, and 6 inches extracted; worm No. 2 similarly treated, and 4 inches drawn out [illegible] extracted.

[illegible]

July 1st.—Foot swollen; complains of throbbing pain above ankle; carbolic acid to be suspended and poultices applied.

7th.—An abscess above ankle opened, giving vent to a con- [illegible] *worm*. This was touched with carbolic acid, and *fully one foot* at once extracted.

[illegible] 6½ inches, also 4 inches of No. 1, and 2 inches of No. 2.

15th.—Worm No. 1 entirely extracted, measures 25 inches.

[illegible] near the knee. To be poulticed; omit carbolic acid.

[illegible] *measuring 27 inches*, extracted without much difficulty.

Notices to Correspondents.

[illegible]

The Indian Medical Gazette.

ADVERTISEMENT REGARDING MEDICAL BOOKS.

THE Publishers beg to call attention to the List of Medical Works advertised by them in this Number, at *English Prices* for cash.—See page 2 of advertisement sheet.

WYMAN & CO.

It is particularly requested that all contributions to the "Indian Medical Gazette" may be written as legibly as possible, and only on one side of each sheet of paper.

The Editorial Office is open daily between the hours of Four and Five, when the Editor will be ready to receive them.

Notices of Books will receive as much attention.

Communications for insertion should reach the Office early in the month, if possible, otherwise they must unavoidably remain over for one publication.

Business letters to be forwarded to the Publishers, Messrs. Wyman & Co.; and all professional communications to the Editor, direct.

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history: and I will not deny to the minister of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

AFLOAT OR ASHORE.

IT is reported that immediate steps are to be taken to begin the building adjoining Prinsep's Ghat, which is to be used as a "River-side Dispensary."

We have not space to review the whole question, but we would wish to state, as shortly as possible, what we consider are fatal objections to such an institution.

It is officially stated that the object of the building is not to be in the form of a Hospital, where the patients can permanently remain; but "it is to be a Dispensary for out-door patients from any ship, and a receiving house only for cases of cholera and sunstroke, &c., where men can at once be treated, and kept until fit to be moved to one or other of the hospitals."

The utility of such an Institution for "out-patients," is very questionable; but we will leave that subject for the more important part of the matter.

The two diseases of urgency, for which the building can be of any use, are Sunstroke and Cholera: let us take a case of the former, occurring on board ship during the heat of the day: a man is struck down at work, would he be bundled off to the River-side Dispensary?

There are directions on board every ship for such sudden attacks, and every officer knows that flushing with cold water, air, and quiet, are the means to adopt until the medical aid of the ship can arrive.

To move a man while under the "stroke," or even while he is partially recovering from it, would be murder.

For Cholera, the building would be of use as a place for early reception; but, what then? grant that you have the experience and appliances of a real hospital, which, under the present scheme, you would not have at this "out-ward," and the patient is to be moved to the main hospital itself, as soon as it is cool enough; at a stage of treatment, perhaps, when any motion would be dangerous, or at all events could not fail to be hurtful.

Thus the institution will practically be a Cholera Hospital, which is going to be placed on the "Course," next to a much frequented "Ghát," and amidst a crowd of passers-by, on foot and water; the place is so public, that the latrines and conveniences must actually be placed inside the building.

In fact, you place on the strand shore a very focus of the disease, for which you endow an Institution to treat curatively.

When the question was formerly referred to the head of the Medical Department, he set his face against the *temporary* nature of the scheme: but his letter was not understood, and he was deemed to be against the plan altogether.

What he did mean was, that if you have not enough accommodation for your sailors, give it them by all means, but do not adopt measures which only temporize with the whole question.

It appears to us, therefore, that no adequate good can be gained by the expense about to be incurred. The building is not wanted for cases of Sunstroke, and it is very doubtful whether it should be permitted in such a central, public, and crowded position, for cases of Cholera.

There is, no doubt, but that more hospital accommodation is required for the sailors of the port. Applicants for admission are often refused at the main Hospitals, and the question as to the best way of providing more wards, is not answered by the provision of a River-side Dispensary.

We believe the answer to be a floating "Dreadnought"—a hulk for instance, like the old *Feroze*, moored to swing in the stream at the most convenient point; if this was found to answer, a second might be established, which would then render the accommodation approachable in every tide and weather.

The tendency to death is rapid in all severe tropical diseases; it is of essential necessity to get a patient settled, as soon as possible, in his hospital bed, and under the surgeon who will likewise have the after-management of the case.

In this River-side Dispensary, neither of these important objects will be obtainable; the patient may have to be moved at a critical stage of the disease, and he will not have the advantage of the best advice on his admission.

But, we think, the question is answered by the establishment of a Floating Hospital, and if we had more space at our disposal, we would enlarge on all the details of the scheme.

EDUCATION IN NATURAL AND PHYSICAL SCIENCE.

WE have reason to believe that the Asiatic Society of Bengal are endeavouring to move Government to provide facilities for the teaching of natural and physical science in the schools and colleges set apart for general education in the country. This movement must, if successful, result in raising the qualifications and status of the native subordinate Indian medical

mental and physical science. The effect of this deficiency, for which the educational system of the country is responsible, out having been first thoroughly well drilled or grounded in the elementary principles of the grammar of that language. He master the higher branches of mathematics, without having first learnt the primary and rudimentary principles of the same. It follows, therefore, that the students of the medical colleges, in this country, have to combine primary or elementary, with secondary or advanced education at the same time; whereas, in the medical schools of Europe, it is considered that the former schools, and that the whole of the student's time should be devoted to the latter during his college career. It is this *or collegiate education* that mars, to a considerable extent, the general rule, from competing for the highest medical degrees Medicine. It has much more to do with the comparatively mediocre position which the practitioners, who have qualified generally supposed.

It is impossible to over-estimate the surpassing importance of primary education in all the professions. But in none is this more essential than in medicine. Neglect this, and the professional superstructure, subsequently erected, is always insecure from want of a solid and substantial foundation. It, therefore, behoves those who are responsible for the medical education of the youths of India to look this question of defective primary instruction, in natural and physical science, fairly in the face, and to make such representations to the authorities as may be needed for its rectification. For it may be safely India to assume, in large numbers, the highest positions attainable in the noble and honorable profession of medicine, until their preliminary or primary education has been elevated to the standard of excellence reached in Europe and America. This remark is especially true in respect of primary instruction in experimental and physical science. Is it not in great measure due to such education in Europe that the devotees of science, and the followers of medicine, have now attained a degree of eminence—altogether unparalleled in the previous history of [illegible] London having created [illegible] examinations, tion of prominence in practical science unequalled, in a given number of years, by a corresponding number, who have qualified at any other university in great Britain?

The Calcutta and other Indian Universities at Madras and Bombay have, to a certain extent, been constructed on the model of the University of London. But, in regard to the matriculation examination, which, in London, enforces an acquaintance with natural and physical science, or at all events with the elementary principles of the same—the Indian Universities are woefully behindhand. To prove this point, we have only to refer to the regulations of the University of Calcutta, as promulgated in the Calendar for 1868-69. We are told, at page 53, that any undergraduate of the university, who can produce a certificate of having completed his nineteenth year, of having been engaged in medical studies for three academical years, after having passed the *Entrance Examination in Arts*, and of having attended certain courses of lectures, may be examined in—(1) Descriptive and Surgical Anatomy, (2) Chemistry, (3) Botany, (4) Materia Medica and Pharmacy, (5) General Anatomy and Physiology, and receive a certificate testifying that he has passed the ordeal of the examination for the *First Licentiateship of Medicine and Surgery*, provided he, the said under-graduate, has satisfied the examiners that he has given evidence—oral, written, and practical—of coming up to the required standard of qualification. Any candidate who has been successful at this examination, after a two years' further study, and compliance with the curriculum, may be examined in—(1) the Principles and Practice of Medicine, (2) the Principles and Practice of Surgery, [illegible] Medical Jurisprudence and Practical Toxicology, (6) Practical, Surgical, and Medical Anatomy, (7) Clinical Medicine, (8) Clinical Surgery, &c., &c., and will, provided the fixed standard of excellency be attained, be granted the certificate of having [illegible]

Thus it is manifest that the passing of the *Entrance Examination in Arts* is all that is necessary to enable the student to gain admission to the college. According to the rules of the university, he can do this immediately after having completed his *sixteenth* year in any school or affiliated institution. After complying with the curriculum, he can obtain his *First Licen-* [illegible] Licentiateship in *two years* more. He may, therefore, finish the medical curriculum in *five years*, and end his studies and pass all his examinations, before he has arrived at the age [illegible] and Surgery is intended to be a good one, and represents the qualifying for the duties of a general practitioner. Few of our students go beyond this qualification, principally because we have good reason for thinking the want of sound preliminary education in natural and physical science renders success, to an overwhelming majority, perfectly hopeless. We feel convinced that neither *time* nor *money* is at the foundation of the smallness of the numbers who even attempt to gain the M. B. and M. D. degrees of the university. We are more inclined to believe that imperfect primary training of our students in natural and physical science, in the general educational institutions below, is at the bottom

of the reluctance or inability of our *alumni* to go up for the highest medical degrees, the university has it in its power to bestow. Be this, however, as it may, we have the extraordinary fact staring us in the face that, at the end of 1868, out of 119 medical graduates borne on the rolls of the University of Calcutta, 93 are *Licentiates of Medicine and Surgery*, 11 are bachelors of medicine, and 4 are doctors in medicine, and out of these 4, one (Dr. Carter) is a distinguished member of Her Majesty's British Medical Service. These figures are striking in the extreme to anyone who understands their real significance. They plainly prove that the absence of primary instruction in natural and physical science is absolutely fatal to the student's success in obtaining the highest degrees of the university in medicine, excepting in a few instances, which may be viewed as the exceptions going to prove the rule. The bachelorship of medicine is a step towards the M. D., and it is in every way doubtful, whether, for the reasons we have already assigned, one of the eleven bachelors will ever venture to encounter the ordeal of an examination for the doctorship in medicine.

Many of our readers at a distance may, by this time, be curious to know in what this *Entrance Examination in Arts*, the passing of which is a certain passport to the Medical College, consists. If any of them expect that it contains stringent provisions for testing candidates in the truths and rudimentary principles of natural and physical science, we at once prepare them for disappointment. At page 36 of the calendar it is laid down as follows:—"At the Entrance Examination, every candidate shall be examined in the following subjects:—

I.—LANGUAGES.

English and one of the following languages:—

Greek	Bengali.
Latin	Ooriya.
Arabic	Hindi.
Persian	Urdu.
Hebrew	Burmese.
Sanskrit	Armenian.

Any other language may be added to this list by the syndicate."

II.—HISTORY.

Ancient History, History of India, General Geography, especially of India.

III.—MATHEMATICS.

Arithmetic.—"The four Simple Rules; Vulgar and Decimal Fractions; Reduction; Practice; Proportion; Simple Interest; Extraction of the Square Root."

Algebra.—"The four Simple Rules; Proportion; Simple Equations; Extraction of the Square Root; Greatest Common Measure; Least Common Multiple."

Geometry.—"The first four books of Euclid with easy Deductions."

This is all. Not one qualification is exacted in natural and physical science properly so called. Yet it matters not what career or profession a youth may select at or after *sixteen*, no other portion of educational training is more calculated to expand the intellect to cultivate the mind, to sharpen the faculty of observation, to train the mind to utilize facts according to the inductive and deductive methods, and to invigorate and strengthen the memory. These remarks are generally true in regard to every profession or occupation which demands, in its pursuit, more than ordinary intellectual development and cultivation, but they are more demonstrably so, in respect of a profession like medicine, which rests on a profound knowledge of several important branches of science—exact and inexact. Even the *First Arts Examination* which those students must pass, who intend to go up for the M. B. and M. D., only demands so much of *Mechanics*, as relates to the "Composition and Resolution of forces; Equilibrium of forces at a point in one plane; the Mechanical Powers, and the Centre of Gravity." The knowledge required to pass either of the Arts Examinations would appear to be arranged with special reference to the exclusion of any particular acquaintance with natural and physical science. The knowledge demanded is one of books, and not of things. The memory is overtaxed beyond all conception at the expense of the reasoning powers, of the faculties of observation, induction, and deduction, and of the intellectual power of assigning to surrounding phenomena the proper place to cause and effect. The truth is that the parrot system of the university encourages book learning, and places practical learning at a discount. The power of memory may accordingly be said to become gigantic at an early period, because it is highly exercised; whilst the other powers of the mind and intellect become proportionately dwarfed, because they continue disproportionately unemployed or unexercised. The result is, as far as the medical colleges in India are concerned, that instead of these institutions being flooded with students possessed of an overflowing abundance of practical knowledge of "Common Things," as in Europe and America, they are swamped by a supply of talented bookworms endowed by nature and art with long memories, but with the other faculties of the mind and hands in a most rudimentary and incipient state of existence and development.

And all this is attributable, *not to the students*, but to the university and an imperfect system of preliminary Education. The idea of admitting students to study medicine up to the Licentiateship, without any previous training in natural and physical science, seems to us so monstrous that we wonder why attention has not been attracted to the subject before. It will not do to say that it is unnecessary to convey this instruction in the schools below, because it can be given at the medical schools above. The impracticability of combining primary and secondary education in science, of uniting the school master and the professor in one individual, has already been demonstrated in this article. We know of nothing, not even mediocrity of intellect, which interferes so much with a thorough system of medical education as deficient primary training in the natural and physical sciences lying at the foundation of medicine.

In drawing this article to a close, we would venture to indicate the urgent necessity for appointing a teacher of natural science, in all the important schools and colleges. This will be expensive no doubt. But if the greatest efficiency be the greatest economy, the measure will eventually repay all expenditure laid out on it. Almost any reasonable amount [illegible] university into *practical men*, would be well expended. We would require the teacher of natural and physical science *to convey elementary and popular instruction*, by *teaching*, *lecturing*, [illegible]

dissertations delivered on the scientific subjects enumerated in

NOTES ON THE JOURNEY HOME.

that ship, that even under boisterous seas, the cabin ports can

should, I think, notice these things, and express a sense of

of greasy and unsavoury provender."

on board these ships, a hospital berth or two, separated from the rest of the cabins, where contagious diseases could be kept apart, and cared for as they required."

has only, I am sure, seriously to be brought to the notice of the

He shall now tell his story in his own words.

except that no more men were to be put in the ward than could cover the floor, though careful measurements had evidently been

Ventilation, also, was of the most imperfect character I have ever seen; the bedding was very inferior to that supplied in

ments was worthy of note, and a warning to us not to retrogress from our present position in India, 115 per 1,000 was

out the mortality, after enquiry in more quarters than one.

I found the jail at Colombo a far different place, indeed, in most respects, a model prison; there, separate cells on an extensive scale are used as a means of punishment; these are carefully ventilated, and in the moderate and equable temperature of Ceylon, where there are no hot winds, they seem to answer admirably; there are also some good barracks, and great cleanliness is observed.

The penal rice diet holds good, however, and the death-rate which, the year before last was, I was told, 117 per 1,000, is still 70 per 1,000, and that, too, independent of epidemics.

The evil of over-crowding is well understood here, and to prevent it, prisoners free from sickness were located in the hospital, a measure which was not attended apparently with any mischief, as no contagious disease was in the place; though, of course, this is a hazardous and objectionable arrangement.

Shot drill was in use in both jails, and would seem to be just the thing for our Indian prisons. The objectless tediousness of spending three or four hours each day in carrying from one spot to another a heavy lump of iron, appears more suitable work for prisoners than carpet weaving, or any of the other easy occupations that make money, but do not act as preventives of crime.

feet high, was adopted, I was told, at the recommendation of the medical authorities, who objected to the men stooping to pick up the shot from the ground, lest it should cause rupture of the spleen and death. The necessity and value of the advice will hardly be appreciated in India, where the whole population their burdens that they raise to their heads in their every-day work.

The severity of the additional labour of stooping to pick up the shot, might render the duration of drill shorter, and leave

all night. It is the more felt while the luxury of the Indian Railway carriage is not forgotten, where no lady or sick person

The charge made by the Egyptian Government for the special train which the P. and O. service obtain, is just about double the ordinary rates for the passenger going from Suez to Alexandria; it would, therefore, be but a small boon for that Government to grant to the P. and O. that, on the recommendation of the medical officer on board the steamers, all invalids should be supplied with room to lie down at full length. This could readily enough be granted, if one or two of the present second-class carriages were made over for the purpose, as in them the seats are padded, and there are no divisions as in the present first-class. If, however, carriages like those in India, with the folding-up bed, were used by the Egyptian Government, the difficulty would be got over without much trouble or expense. This subject should be taken up by the medical authorities in India, as many invalids are now sent round the Cape often merely to avoid this part of the homeward route.

At Alexandria, through the kindness of Dr. Mackie, Surgeon to the British Consulate, I saw all the hospitals, or most of them, both European and Native.

It would repay medical travellers through Alexandria, to visit these, and see what is being done professionally.

One of the most interesting diseases here, to us in India at least, is "hepatic abscess," which is unusually frequent among some portions of the community, especially the Greeks, who form quite a colony of foreigners in this city.

In a small Greek hospital, I saw three cases doing well, that had been operated upon successfully, and so common is the disease, that in the autumn months, 50 per cent. of the cases under treatment are hepatic abscess.

What particularly struck me was the freedom with which operations on the liver were talked of and performed. Dr. Mackie told me that, some three years ago, on reading a paper on hepatic abscess, in the *Lancet*, by an Indian surgeon, he was impressed by the remarks there made, on the immunity from evil efforts, that followed surgical interference with the substance of the liver. The paper insisted on the safety and necessity of *early* operation in abscess of the liver. Immediately after, some favourable cases presented themselves, and were successfully operated on by Dr. Ogilvie (Bey), his late colleague, and himself. Since then numerous cases have been operated on, and they have established the practice in Alexandria of proceeding to evacuate the matter immediately it is believed to have formed. Their experience has led them to conclude against the advisability of waiting till fluctuation is distinct, or the occurrence of the abscess pointing externally, before putting in the knife. Indeed, they believe that, at such a stage, operation is little likely to be successful in saving the patient.

Dr. Lancaroli, a Greek physician, has made some valuable statistics on this subject, which he proposes publishing shortly. Some of these are that, out of cases operated on, 30 per cent. are lost, while of those not operated on, 85 per cent. die.

His observations on the rate of mortality on the abscess bursting into the lungs is singular, and certainly are not in accordance with my Indian observations; he states that only seven per cent. of these cases prove fatal. It would be a great matter if this should turn out to be a true statistical fact also of what occurs also in Indian practice, as it would give some clue to the cases of death after operation; to the cases, again, of death as if the antiseptic character of the air in the lungs acted as a purifier of the external atmosphere, and would lead to an extension of the practice begun in Calcutta of opening such abscesses under the influence or syringing out with carbolic acid.

As liver abscess is shewn to be one of the most fatal diseases in India by Bryden's Tables, and one in the cure of which we have made no progress of late years, the subject is surely peculiarly interesting.

The opportunities in India are but too numerous of studying the disease, especially in the European army. This mode of attempting a cure is also essentially belonging to India: it was originally essayed in that country by Dr. Murray, Inspector-General of Her Majesty's army, and it has been successfully and largely practised by his nephew, the present head of the Bengal Medical Department, who, over a long series of years, has been most earnest in inculcating his opinions and practice.

In Alexandria the disease is by far the most common among one class of people, the ill-fed Greek population, who are addicted to "Rakki" the native liquor of the place; the better class of Greeks do not suffer; nor do the Greeks of the lower orders suffer in Corfu, and the other Greek islands, which are close to Alexandria. There is plenty of malarious ground near Alexandria, but there is the same in Corfu; drink and malaria appear, however, to be the two grand combinations best suited for the generation of abscess of the liver in Egypt; is it not so also in India.

Spleen disease is rarely seen when the liver is enlarged in Alexandria, and most of us have witnessed the same fact in India.

VACCINATION IN THE PUNJAB.

Dr. Graham, the Superintendent-General of Vaccination in the Punjab, states in his report for the year 1868:—

The total number of cases vaccinated by the Punjab vaccinators, establishment and dispensary vaccinators was 2,53,502, of which 2,38,881 were successful, at the cost of each successful case of two annas seven pie and a fraction.

It is worthy of remark that the percentage of successful cases is increasing year by year, and that, too, under more efficient superintendence.

An assistant, Dr. Newton, having joined Dr. Garden in November as Superintendent, "the inspection of work is now much more satisfactory," and, again, "the work of all the vaccinators can now be inspected, which before was impossible."

The whole report is very interesting, but we have not space for details. During the summer, the hill territories of Chumba, Kangra, Kulloo, on the Eastern side of the Sutlej, [illegible] villages bordering on Lahoul were visited, and [illegible] inhabitants vaccinated.

We regret to hear of the failure of the operations on the Trans-Indus Frontier line, and this more as that district [illegible] yearly [illegible].

In the Hazara, "on several occasions I, as Deputy Commissioner, was [illegible] the Hindus [illegible] objected to its being done, and I did not attempt to press it [illegible].

Dr. [illegible] and [illegible] [illegible]

[illegible]

Dr. Garden's opinion is that inoculation should be entirely forbidden, as it tends not only to keep up the disease, but is also sometimes the cause of its becoming epidemic. Some sta[illegible] subject.

The Lieutenant-Governor of the Punjab, in acknowledging the report, thanks the medical officers and others who have taken interest in the subject, sends commendatory letters to a hill chief and to several leading natives of municipalities, *khilats* of [illegible] *parwanchas*, [illegible]

NEW WORK ON ANATOMY IN OORDOO.

Mr. S. P. Johns, Sub-Assistant Surgeon and Lecturer in [illegible] Agra Medical School, proposes to bring out an illustrated work on the above subject.

The idea originally suggested itself to him by finding his lectures, printed for the use of his pupils only, sought after by [illegible] in many parts of Northern India, and the work [illegible]

It is to contain 300 illustrations copied from the last edition of Quain's Anatomy, and he hopes to be able to sell the work [illegible]

There is no question that a work of this sort would be of great practical value to the native student and practitioner, if it only comes up to the standard required: we will await its appearance before saying more on the subject.

PROFESSOR SYME'S RECENT ILLNESS.

[illegible] Professor of Surgery in Edinburgh, his former pupils at the Presidency have addressed a letter of condolence to him.

[illegible] Bengal and Indian medical [illegible] May, to save delay. [illegible] be glad to have an opportunity of expressing their feeling towards their old master, the names of those hereafter transmitted will be attached to the original letter.

[illegible] Bengal, Barrackpore, has very kindly consented to collect names, and [illegible] service, or out of it, will send their wishes to him, he will [illegible]

Official Selections.

EXTRACTS FROM THE RECORDS OF BENGAL MEDICAL DEPARTMENT.

[illegible] (Continued from page 166.)

In April, 1787, sanction is accorded for building an hospital [illegible] "The [illegible] 18 feet [illegible] was of [illegible] and [illegible] of bamboo and straw." Dispensary and store-room, &c., also provided for, the estimate for it was Rs. 5,637.

[illegible] tender of his house in three biggahs of ground, to the Board, for a European hospital at Chunar. It cost Rs. 3,000, and its de[illegible] built (except the roof), of the best materials, consisting of a hall [illegible] 2 others 14×14. "The whole well-fitted with remarkably large airy doors and windows, 24 of each, made of *saul* and *sissu* timbers with locks, hinges, and bolts complete. Verandah in [illegible] 14 wide on [illegible]

Hospital Board, 21st May, send a letter to the Governor-General in Council, suggesting "having a convenient house in the neighbourhood of Calcutta, for 3 or 400 rupees a month, the proprietors to surround it with a wall six feet high" for insane officers and soldiers; a proposition which was agreed to on the same date.

In connection with this, which must be the origin of the present asylum at [illegible]? Mr. [illegible] Assistant Surgeon, recently appointed to the charge of insane patients at Calcutta, writes to the board, proposing to build a two-storeyed house, the upper rooms for officers, the lower for privates, for reception of patients, and wishes Rs. 400 a month to be given for it, [illegible] will have a large window to the southward with iron bars and fixed venetians, and a door to the northward, which will [illegible] by 8 wide, and the [illegible] feet ward will be [illegible] by 16 broad" for exercise, &c.; wall round the estate and offices in it are provided for; it is not stated for what number of patients it was to be built.

The Board send it on to the Governor-General with their recommendation.

The Governor-General in Council accepts the proposition, and directs the Board of Revenue to "select spot of waste land in the neighbourhood of the hospital on which a house may be erected."

16th July.—Hospital Board report to the Governor-General that, after several meetings with the Commissary-General, [illegible] and their being supplied with every necessary and comfort, to put [illegible] of the patients.

(Surgeons in former years under the contract system were obliged to buy and keep up their own instruments, and on this system being put a stop to, the E. I. C. bought them.)

[illegible] be abolished, and that the whole corps of assistant-[illegible] pay and [illegible] Lieutenant's pay and batta.

[illegible] of the [illegible] per measure [illegible] Rs. 12 a dozen. Futtyghur rate [illegible] original cost, duties, river-risk and leakage.

[illegible] vinegar [illegible] for [illegible]

shall not exceed the rate of Rs. 70 per mensem for every twenty men.

Contingent bill to include petty repairs of building and articles for use of the sick, stationery, lamps for the wards, keeping necessaries clean, and carrying away the soil, &c.; no sum can be fixed for; but every surgeon must be responsible to the board that his charges are not exorbitant.

11th September.—By letter dated 27th March, the Court of Directors advise the Governor-General of their having sent out 50 tracts of the Royal Humane Society, and two drags and apparatus for Bengal and Fort St. George, and recommend the said institution to the particular notice of each Government.

As far back as this year (1787), the Court of Directors inculcate the use of indigenous drugs, and the tinctures that can be made from them (24th September).

Separate "nurses" allowed for infirm patients at Chunar by the head surgeon, and sanctioned by the board.

A G. O. by Earl Cornwallis, dated Futtyghur, 13th October, "Mr. Fleming (Junior Member of the Board) is ordered to inspect the hospitals at the different stations of the army, and to report to the Commander-in-Chief the state in which it appears to him that the business of the respective hospitals has been carried on" (7th November).

22nd October.—Assistant-Surgeon of Berhampore hospital reports that the expenditure of peruvium bark has been very considerable for some days past, and indents for more.

(Year 1788.)

4th January.—The Hospital Board is ordered to assemble about this date for the examination of European invalids, of whom there are about 100, so that "they may be in readiness to proceed to Europe in the ships now under despatch."

Mr. Purveyor Birch addresses the Hospital Board about adjustment of account and details. "The wine used during the last month of the rains exceeded the regulations (six dozens per mensem for twenty men) by 13 dozens in September, and by 3½ dozens in October;" this would seem to show that treatment by alcohol, or rather keeping up the system at the most depressing season was not neglected at this date.

8th February.—Mr. Dick, the Surgeon of the Lunatic Hospital, writes to the board to sanction expenditure for clothing, cots, and other necessaries for the use of the sick, and among other articles detailed are 12 iron chains for the legs with jointed hoops to go round the waist, and shackles to confine the hands at Rs. 3 each.

He gives a list of officers and men in the insane house at this date. The numbers were—

Officers of the Army, 5; of ships, 2; not in any service, 4; soldiers, 14, sailor, 1.

The monthly charge of soldiers were defrayed from their pay and batta; for gentlemen Rs. 50 a month was charged, for which they are allowed "tea, bread and butter, and wine twice a day." One sergeant and four private soldiers were allowed to attend the insane patients, and that they might do their duty "with diligence and humanity" an allowance of Rs. 10 a month was granted, and for every insane patient one cooly was authorised at Rs. 4 a month.

The Brigade Major of Artillery, dating Camp Dum-Dum, 29th February, writes to the Board:—

"I am directed by Colonel Pearse, commanding the troops at the Presidency, to acquaint you that the Right Honorable the Commander-in-Chief having authorised the inoculating of the men belonging to the corps of artillery and infantry in garrison, who have not had the small-pox, at Dum-Dum, under the surgeons there, a bungalow has been built for the reception of the whole, to prevent the expense of separate establishments;" and concludes by requesting the surgeons may be supplied with what medicines and necessaries as may be requisite.

It was a matter of will, apparently, on the part of soldiers whether they would undergo it or not, as those who wished for it were to give in their names, they would be struck off duty, "and are not to pay stoppages out of pay or batta as is usual for other sick."

About this time (4th March), the Government had sent to the Board a comparative statement showing the different cost of soldiers in hospital per mensem at different stations, and require explanation of the difference. The Board, in a long letter of six pages, go into the whole subject, and give the following broad views of the treatment of the sick:—"Although we deem economy a most important point in the management of a military hospital, we are far from judging it the only, or even the most important consideration. One of still more consequence is the proper treatment of the sick, and the taking care that they may not be deprived of, or even supplied scantily with, any article essential to their welfare and speedy recovery." And they decry the system of comparative statement as being liable to make a Surgeon in charge captious, and they deprecate that "the sole test of the good conduct of the surgeons" who have charge of the sick, should be lowness of the rate of charge for patient." "Were such a principle admitted, it might tend to operate in a manner that would give your Lordship the sincerest concern, by tempting persons, in the management of hospitals, to endeavour to make the dear purchase of character for frugality and economy at the expense of tenderness and humanity to the sick."

In April, Mr. John Peter Wade, assistant-surgeon at Chunar, forwards to the Board a scheme for a Medical Library. It is a long letter of six pages, employing arguments for its utility that would hold to this day. The proposals are submitted to the Surgeons of the Establishment for the purchase of recent publications on professional subjects, and the collection of the most approved of the ancient and modern authors on medicine, surgery, and chemistry.

The Board (24th April) return a very curt reply disapproving of the plan.

On May 21st, the Secretary to the Military Board requests the opinion of the Board (by order of Governor-General), "whether fumigation in barracks is conducive to the health of the men," and if so, to point out the best articles for use, &c.

The Board on the 23rd submit a memorandum on the subject, thus: "although the practice of fumigating barracks may, in some particular cases which we shall afterwards point out, be of service and even indispensably necessary, we are of opinion, that where the buildings are sufficiently dry and properly ventilated, where too many men are not crowded together, and where proper attention is paid to cleanliness, fumigations are altogether unnecessary, and that the expenses of them may very properly be saved. Of these circumstances, the last as it is the most in our power, so it is by far the most essential: where cleanliness is neglected, other preservations will avail very little, where it is observed they will in general not be necessary." When necessary, they recommend a red-hot bar of iron put into a bucket of tar. Steam of boiling vinegar, for using which a machine had been recently "invented by Mr. Day of Maidstone, and which is now much used in the gaols and hospitals in England." "Upon the principle of absorbing fixed air depend the good effects of washing the walls and ceiling of hospitals and barracks with lime—a practice which is found highly beneficial, and which ought, therefore, to be used very frequently."

(To be continued.)

The Annual Meeting of the Bengal Branch of the British Medical Association.

The annual meeting of the Bengal Branch of the British Medical Association was held in the theatre of the Medical College on the 16th March, 1869.

Dr. Norman Chevers in the chair.

Dr. Chevers said that, before resigning his appointment as President of this Association, he could not but speak with regret of the falling off in attendance, which had occurred—especially during the latter part of the year. The meetings had gone well, but gradually had ceased to attend, and latterly there was scarcely any meeting at all. The younger members of the association were chiefly in fault, the seniors attended more frequently. The object of the Society was, that young and old should meet for the free discussion of various interesting medical points.

If [illegible] was so ably qualified to fill it as his esteemed friend Dr. Ewart, [illegible]

than 1,200 specimens of diseased conditions of the various parts and organs of the human body have been added to the patho-

wherever deemed necessary, the microscope has been employed

In the catalogue of the pathological preparations contained in the college museum, published in 1865, it is demonstrated transmitted to the curators since its foundation, yet the total hundred and twenty-two morbid specimens. When, therefore, mented activity in the construction of a monument of industry

Many of the preparations are doubtless perishable; but with they cannot, the English language in which their histories are printed or recorded is imperishable. In this way, even though were destroyed beyond all hope of redemption, the records would still be available, inasmuch as copies of the catalogue have been exchanged with all the important pathological museums in Europe and America, and have been distributed to every Settlements.

In the earlier developmental stage of the museum, sufficient attention was not paid to entering the particulars about the specimens in the registers. The consequence is that some of the most valuable of the early contributions are destitute of history, many excellent illustrations of the effects of the combined operation of syphilization and mercurialization upon the long and flat bones, yet there is not a single line of writing in the registers several specimens of bones in our collection, it may now be assumed, are the results of syphilis and mercury. But there is no written evidence to prove this. And this is all the more to be regretted, because, in the present day, when mercury is given sparingly, or not at all, in syphilis, we rarely see the specimens of the combination, or the destruction of the bones. such omission as this has been allowed to vitiate or deteriorate

It may be that, in the whole of this collection, there may be way detracts from the acknowledged utility of such a patholo- formation at all the centres of political, social, intellectual, Asiatic Society, arranged and classified in the Indian museum. the student of medicine. For it is there, with book in hand, and structures of the human frame-work. Thus, he can learn

a hitherto untrodden field, rich to a degree in materials illustrat- countries, and ready for cultivation.

uncertainty of medicine. There is some truth underlying this. infinitely more satisfactory, as regards certainty, than politics. though there is uncertainty in the application of medicine and therapeutics, this is not so great in degree as the uncertainty which we are constantly called upon to witness in law, politics, and history. All the professions, in their practical application, the other learned professions. And one reason for this greater perfection is, that medicine is founded upon collateral branches exactitude of anatomy, chemistry, and that portion of physio- question or doubt. Our experience in physical diagnosis, and practice of physic may, in some of its departments, become ranked as an exact science. Nay, the certain results of some drugs are so well pronounced, that we are at liberty to infer, in good time, even therapeutics may also take rank as an exact department of medical science. When, therefore, we are taunted by our kind and good friends in the other learned professions with the uncertainty of the art and science of medicine, we are fairly warranted in reminding them, in a friendly spirit, that "those who live in glass-houses should not throw stones."

the public as much as the medical profession in India. Up to within a few years, that profession has virtually been constituted, with few exceptions, of the European and Native medical servants of Government. Medicine, in its most comprehensive sense, comprising all branches of the "healing art," and as practised in England and America, and the British colonies, has hitherto been in the hands of the English, Scotch, and Irish gentlemen, who have filled the ranks of the medical services of the three Presidencies; and, since the foundation of the various well represented by the graduates of the colleges and universities, so that Dr. Chevers was perfectly correct when he remarked, some time ago, that the old East India Company's and Military Medical Service specially set apart for Indian duty, but it constituted, so far as the European system of medicine was concerned, the most important portion of the "medical profession of India." The remainder is made up of the native graduates in Government employ and of their brethren who have settled down in private practice in this and other cities.

I am happy to think that the native medical profession is receiving fresh annual accessions to its ranks; and that the popularity of medicine with the educated youths of the country is an incontrovertible fact, proved by the increased demand for admission into the older institutions, and by the establishment of additional medical schools in the provinces. There are now many practitioners of the European system of medicine permanently settled in the more densely-populated towns and districts of India. And the augmentation in the numbers of these is annually effected by new accessions from the Medical Schools of Calcutta, Madras, and Bombay. Besides these, the Bengalee class of the Calcutta Medical College, is constantly supplying a number of and *Sehcraj*, but inferior to the licentiates of the university.

At present there is a want of organization or cohesion among the members of the Indian medical profession. This can only be rectified, without cost to Government, but with incalculable benefit to the public, by the passing of a Medical Act, so moulded a state of the circumstance of the Act, a Council of Medical Education and Registration would have to be formed; and it tion, and to see that all qualified men, who have paid the required fee, are entered, with their qualifications, in the medical regis- to have only one examining body in each Presidency. So that

authority. It would be optional to each practitioner to register his name or not as he may deem expedient. But the protection of the law would only be extended to him, who had secured for his name a place on the register.

With regard to the hereditary indigenous practitioners of the country, the same principle might be adopted as was done with the established practitioners in England, at the passing of the Apothecaries' Act, and the Medical Act. If so, then every *kobeeraj* and *hakeem* would be entitled to register; but the column exhibiting his qualification would plainly show the class of practitioners to which he belonged. It is from among the sons of these men that many of our students now studying at the college, are really recruited. But even if it were not so, I would not hesitate to give the present generation of these gentlemen, a place in the medical register, on the payment of the prescribed fee, whatever that might be fixed at.

In seeking from the Legislature, "A Medical Act for India," the Association would not be asking for anything unreasonable. On the contrary, the liberal and broad views which the association would enunciate would, if practically carried out, benefit the public more than the medical profession. We should ask for a measure, the whole expense of which would be borne by the profession—a measure which, while conferring great advantage upon the people, would tend to harmonize, unify, and consolidate the medical profession in India.

At the late convocation of the university for conferring degrees, it was truly remarked by the Chancellor, Lord Mayo, that a time existed when, among influential people, it was considered right that the natives of this country should not be educated on too liberal a scale; but that now all doubt had been dispelled, and Government had determined to educate the natives of this country on a scale of magnitude and liberality not exceeded at home. Now, gentlemen, whatever doubt may have existed among politicians as to the propriety of imparting the general knowledge of the West to the teeming millions of British India, I can bear witness from a conversance with the records of medicine in the East, that no such doubt ever existed among the disciples of Æsculapius. They have always struggled manfully to disseminate the principles and practice of Medicine to their brother Aryans in India. How could it be otherwise? Medicine is the personation of liberality, generosity, and charity. It is cosmopolitan in its aims for doing good and relieving the pains and pangs of suffering humanity. The true physician and surgeon lays open to the whole of his profession everything new which promises to be beneficial to mankind. He has no secrets. His knowledge once in print becomes the common property of all. Need I cite examples of these truths? If so, let me point to the discovery of quinine, morphia, ether, and chloroform; all of which have conferred vast advantages on the human race either in mitigating the consequence of disease, or in altogether preventing pain being felt, during the most heroic and appalling surgical and obstetric operations.

As a consequence of the catholicity of sentiment, which has ever characterized a preponderating majority of the medical profession, we see the spread of medical education going on not only in our colleges and schools, but in every hospital in the country from Peshawur to Ceylon, from Rangoon to Bombay. The progress being made is rapid. It is also successful. This is greatly facilitated by the immense advantage which the country enjoys. India, as regards medicine, (and it may be said as regards other things also,) is now reaping the benefit of the culminated results of progress extending over eighteen centuries and a half. We are endeavouring to transplant the medical knowledge of the West, which has taken eighteen hundred years and upwards in arriving at its present state of advancement into India. Hence, the unparalleled rapidity with which medicine is spreading among the learned *alumni* of our colleges and schools. And hence, the urgent necessity for organizing the followers of medicine by legislative enactment on the principles embodied in the English Medical Act; but yet in so modified a form as to embrace all the practitioners of legitimate medicine, and so tabulating their names that their qualifications may be open to the inspection of the public and the profession in the *Indian Medical Register*.

In concluding my remarks on this subject, I would wish it to be understood that in drawing the attention of the members of the association to this subject, I have only alluded to a few leading principles; and that should the Legislature be disposed to entertain the proposition for an Indian Medical Act, all the needful details might afterwards be collected and arranged without difficulty. Whatever may be the result of these observations, one thing is certain, that India cannot wait much longer for such her indigenous imported medical profession is placed before the law, the public and themselves, in a position analogous to that which their compeers enjoy in Great Britain and her other great dependencies.

Before bringing these desultory remarks to a close, I am desirous of briefly approaching another question of great interest to our profession. I have already pointed out how much India can be made to benefit by the transplantation of the work of 18 centuries of western civilization in a comparatively short period of time. It is owing to this extraordinary start, if I may so use the term, that, out of the three coroners at Calcutta, Madras, and Bombay, two are medical gentlemen. Prior to the writings of the late Mr. Wakley, the founder, proprietor, and editor of the *Lancet*, himself the first medical coroner in Great Britain, this post of coroner—one the prime object of which is to ascertain the cause of death in all cases of suspicion or foul play, was invariably filled by a non-medical authority. The influence of Mr. Wakley's writings and example, as a coroner, have created a revolution in this respect; for, in almost every case, where the profession are united and true to themselves, a medical man is selected to fill the post of coroner, whenever that office now falls vacant in England. The time is approaching when, a coroner unhampered, unfettered with judicial or magisterial work, a knowledge of which has nothing to do with such a medical education as would assist in the elucidation of the cause of death in cases of suspicion or sudden death, will be required for every station and town of importance in India. And until this is done, that full measure of security to life, which can only be afforded by having a medical coroner in every important station, will remain comparatively in abeyance. When, however, that time does come round, the fact that, out of three coroners now in the Presidential cities, two are medical gentlemen, augurs well for the chances of success by our brethren, in any other coronerships, which may be created, in the interior of the country.

Finally, gentlemen, I beg to thank you most heartily for conferring upon me the distinguished honor of electing me to be your president for the ensuing year, and to promise that no effort of mine shall be wanting in endeavouring to promote the interests of the association, and through that, the profession of medicine in India.

Dr. Chuckerbutty then rose and proposed a vote of thanks to Dr. Ewart for the very excellent address with which he had favoured the association.

Moulvie Tameez Khan, Khan Bahadoor, presented a specimen of the Lall Chittra which was taken from the uterus of a woman after death, having evidently been introduced for the purpose of causing abortion. It was situated in a common cavity made by the sloughing of the posterior wall of the uterus, and the anterior wall of sigmoid flexure of the colon. The piece of wood was covered by an incrustation of the phosphates and carbonates of lime, and throughout the substance of the wood, there appeared to be crystals of the carbonate of lime. It evidently had been in the body for some time.

Dr. Chevers also presented a very interesting and instructive specimen of aneurism of the arch of the aorta illustrating the possibility of cure of aneurism of the arch. He considered it the best specimen he had ever seen of perfect cure of aneurism of the arch of the aorta by the filling up of the sac with an organised clot. The patient had been for a long time under observation; his first symptoms were those of pressure on the right bronchus by an aneurismal tumor, but under treatment, the symptoms of pressure disappeared, and the symptoms of aneurism after a time became nearly quiescent. He died from chronic dysentery combined with a low form of pneumonia. The aneurism after death was found situated at the arch of the aorta involving all the large branches given off. It was filled with a firm organised clot, but the channel of the aorta was quite free, as also the orifices of the various branches given off by the arch, and the whole of the artificial canal thus formed had a polished membrane-like surface.

The particulars of this case will be published hereafter.

15th April, 1869.

Extracts.

FARADISM AND THE MONSTER CLAY

MANY years have passed away since [illegible] discovery of [illegible] many [illegible]

universally called Faradism, and its employment Faradization;

the positive pole and the other with the negative pole of the battery. This wire is called the primary coil, and around it

are in contact, the induced current passes through it without

the induced current makes itself manifest by crossing the space between them, when this is not too considerable or too resisting, in the form of an electric spark that can be seen, or of a current that can be felt. For use the extremities of the wire are connected with the terminals or electrodes by which it is required. In order to display sparks to advantage one

metal disk. In order to pass a current through any part of the human body, the electrodes are metallic knobs or cylinders,

The induced current in the secondary coil is not a continuous phenomenon, but is only manifest at the moment when the galvanic or battery current is allowed to pass through the primary coil, and again at the moment when it is cut off.

connexion between the battery and the primary coil is rapidly

breaker," usually some form of vibrating hammer, which com-

ordered very large and powerful. Such a coil would light up

diameter. Its core of soft iron is formed by a bundle of straight

of the monster they had created was by the utter destruction

has a zig-zag course, but all around it the glass is starred in radiating lines, which make the perforation appear larger than it really is. When the terminals are brought within about three inches of each other, the discharge appears to issue more

away in a broad sheet, leaving the actual line of discharge unaffected and visible by its different colour. Some other phenomena, hitherto only discoverable by the most delicate instruments, have already been rendered plainly apparent to the senses, and for some time to come it is probable that each day

considerable lengths of wire with great rapidity. A larger Leyden battery is in course of construction, to consist of 30 widemouthed carboys, each holding 10 gallons.

For the purposes of the Polytechnic, the new coil will be

Pepper to display effects, beautiful or terrible, such as have never been seen before; but it will have also for higher uses than this. Sir Humphry Davy's great galvanic battery was the immediate cause of the discovery of many previously unknown metals; and every marked increase in the power of scientific apparatus has been followed by a corresponding increase in the growth of knowledge. The coil will not only amuse audiences, but will be diligently used at other times to promote the researches of electricians and of physiologists.

every doubt they remove, will come in time, if not immediately, to be instrumental in promoting man's convenience or in alle-

DRY EARTH TO WOUNDS

learn that, as the time of the introduction of an earth closet into the surgical ward of the Pennsylvania Hospital for trial,

tion of the ward, and the use of disinfectants.

wound itself assumed a far more favourable aspect. The idea

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE POISON, AND ON THE INJECTION OF LIQUOR AMMONIÆ INTO THE VENOUS CIRCULATION AS AN ANTIDOTE.

BY J. FAYRER, M.D., C.S.I.

SINCE my last report on the subject of snake-poison, I have received a communication from Professor Halford of Melbourne, whose researches have already thrown so much light on this interesting pathological question. In a paper of which he has kindly sent me a copy, read before the medical society of Victoria, he strongly advocates the injection of ammonia into the circulation; he also details several interesting experiments as well as cases of snake-bite in which the results were satisfactory.

This mode of treating poisoning not only by snake-bites but by chloroform, hydrocyanic acid, and other toxic agents, among which pyœmia is mentioned, and cholera suggested, has evidently been received with much confidence in Australia, and the matter is fully and ably discussed in the paper in question. The subject also of the structural changes in the blood to which I have frequently adverted in former papers, and which were described by Professor Halford in 1867: *Vide British Medical Journal*, July 20th, and December 21st, 1867,* is also referred to with some further explanations, and which so far, as I can understand it, modifies the views as at first expressed by Dr. Halford. In the paper to which I have referred, Dr. Halford says of those corpuscles, "he had never seen those cells *before death*, but he believed the organic germinal matter of the serpent's poison to be the efficient agent, and the *post mortem* changes in the blood to be in some way connected with a metamorphosis of the fibrine of that fluid which so far as coagulation was concerned, appeared

British Medical Journal July 20th, 1867, *Page* 43.

* When a person is mortally bitten by the cobra-di-capella, molecules of living "germinal" matter are thrown into the blood, and speedily grow into cells, and as rapidly multiply, so that in a few hours millions upon millions are produced at the expense, as far as I can at present see, of the oxygen absorbed into the blood during inspiration; hence the gradual decrease, and ultimate extinction of combustion and chemical change in every other part of the body, followed by coldness, sleepiness, insensibility, slow breathing, and death.

The cells which thus render in so short a time the blood unfit to support life, are circular, with a diameter on the average of one seventeen-hundredth of an inch. They contain a nearly round nucleus of one two thousand-eight-hundredth of an inch in breadth, which, when further magnified, is seen to contain other still more minute spherules of living "germinal" matter. In addition to this, the application of magenta reveals a minute colored spot at some part of the circumference of the cell. This, besides its size, distinguishes it from the white pus, or lymph-corpuscle.

Thus, then, it would seem that, as the vegetable cell requires for its growth inorganic food and the liberation of oxygen, so the animal cell requires for its growth organic food and the absorption of oxygen. Its food is present in the blood, and it meets the oxygen in the lungs; thus the whole blood becomes disorganised, and nothing is found after death but dark fluid blood, the fluidity indicating its loss of fibrine, the dark color its want of oxygen, which it readily absorbs on exposure after death.

Let it not be thought that microscopic particles are unable to produce such great and rapid changes. It is well known, and I have frequently timed it with my class, that a tea-spoonful of human saliva, will, when shaken with a like quantity of decoction of starch, convert the whole of the latter into sugar in a little less than one minute. If ptyaline, the active principle of saliva, exerts this power at most in a few minutes, then surely the active principle of the secretion of the serpent's poison-gland many exert an infinitely greater power in as many hours. It results, then, that a person dies slowly asphyxiated by deprivation of oxygen, in whatever other way the poison may also act, and so far as the ordinary examination of the blood goes, the *post mortem* appearances are similar to those seen after drowning and suffocation.

I have many reasons for believing that the *materias morbi* of cholera is a nearly allied animal poison. If so, may we not hope to know something definite of the poisons of hydrophobia, small-pox, scarlet fever, and indeed, of all zymotic diseases?

British Medical Journal, December 21st, 1867, *Page* 561.

The following was the result of numerous experiments on dogs and cats. Blood soon drawn from an animal bitten by a snake contains a larger amount of nebulous or finely granular matter than is usually seen. After the lapse of one hour this nebulous matter is much increased in quantity, lying in the intervals of the red corpuscles, and presently it breaks up into small masses, out of which the cell is gradually evolved. In two hours after the bite, the cells may be seen in great numbers, but very indistinct. From this time every further microscopic observation shews them in great abundance; and from the sixth to the twelfth hour they may be seen in perfection, macula and nucleus included. Whilst this is taking place the nebulous matter disappears; the nebulous matter must, therefore, be regarded as the germinal matter out of which the cells are formed. At this time the cell-wall is extremely delicate, the macula very plain as a bright particle, and the nucleus either single, reniform, double, triple or multiple.

It would appear that the cells are now increasing in number by division of their nuclei, and the minute particles, having the vibratory movement of molecules in fluid, may be seen between the nucleus and cell-wall. On one occasion we watched for upwards of half an hour a constant revolution within the cell of a particle corresponding in all particulars to a macula. This particle passed regularly round the nucleus at an uniform rate, revolving both in the direction of and against the current of the fluid in which the cell was flowing, reminding one of the movements seen in valisneria, &c. Twenty-four hours after the bite, the cells attain their greatest size, and, supposing the animal then dead, have probably ceased multiplying, and are simply living or perhaps growing, the nucleus being usually single, the macula extremely distinct, and the cell very large. It is not uncommon at this time and later to see a cup shaped hiatus in the cell-wall from which the macula has escaped. The cells may be seen in the blood for many days, their presence seeming to be preservative against putrefaction. Where they have most room, as in the venœ cavæ, cranial sinuses, and cavities of the heart, they attain the greatest size and most circular form. In every instance the cell-wall is very elastic, and accommodates itself to surrounding pressure.

To ascertain how soon after inoculation these cells appear, is a matter of some difficulty. It is not necessary to suppose that at first they are very numerous; and, in order to detect them so early, it might require fifty or a hundred microscopes and observers at work at the same instant. Still, from their having been seen two hours after the bite, and from all we know of the rapidity with which new formations occur, both in health and disease, it is doubtless extremely soon. Of one thing we are sure, *viz.*, that the nebulous germinal matter from which they spring is within a few minutes diffused all over the body; for supposing an animal to die in five minutes, and hence all circulation stopped, the cells are as readily seen in its blood a few hours after death as if it had lived as many hours as we say minutes. The macula is, doubtless, a particle of germinal matter; but, whether it is to be regarded as that from which the whole cell has sprung, or whether it has been detached from the nucleus and is destined for independent existence, it is difficult to say. The fact that it is almost invariably large when the cell is small, and small when the cell is large, favors the first view. Perhaps the most important point must be left still undecided. Has the blood built up these cells, directly or indirectly, from the germinal matter of the serpent? The answer to this question the professor would endeavour to give at a future meeting; but in either case the result was the same, storing up of force in the new growth, at the expense of the nutritive properties of the blood, and by perversion of those chemical changes necessary to the maintenance of the life of the infected animal.

That the germinal matter exists in a state of extreme minuteness, the following experiment shows:—A cat, being with young, was inoculated with the poison, and, dying in three hours, her four kittens were removed from the womb. They were dead, and the blood of all contained the foreign cells, as did that of the matter. To pass from the cat to the kittens, the germinal matter must have penetrated the delicate membrane covering the tufts of the fœtal vessels. If the poison of serpents can thus readily be traced through the body, and from parent to offspring, why should not the path of all infections be tracked? Some months ago, it was stated that it was conjectured that a child had been bitten by a snake. No doubt need ever exist for the future; a drop of blood will always furnish the necessary evidence. He trusted the subject would not be let fall to the ground in Victoria, for it would assuredly be taken up at home. It had been to him a matter of surprise that, while this colony very properly appoints men to survey her coasts, explore her skies, and the ground beneath her feet, no one systematically explores her diseases, a subject in which the rich and poor, the living and those about to live, are equally and deeply concerned, and in comparison with which many other subjects that excite her people are trifles.

[illegible] May [illegible] examinations have been confined to the poisoned blood, during the life [illegible] animal thoroughly bitten by a cobra, is due, not to any organic changes in the germinal matter or cellular structures of the blood, for which, indeed, there is often not time. But as life may be suddenly destroyed by such poisons as hydrocyanic acid, before any blood change can possibly occur, so in the case of the bite of a vigorous cobra in a small animal, death occurs almost, if not quite as instantaneously, but by its direct influence on the centres of nerve force, by exerting an antagonistic force, one that is incompatible in short with those which regulate and govern the phenomena of life. I have already expressed an opinion which I repeat, that when death occurs more slowly, and when time is given for blood changes to take place, that such do probably occur as in other toxi toxemiæ, and that the man [illegible]

Experiment No. 1.

[illegible] Dr. Fayrer, Dr. J. Ewart, Professor of Physiology.

Mr. Sceva.

[illegible] May, 1868, at 2.48 p. m.—The femoral vein of a middling sized healthy dog was carefully exposed, and 3i of liquor ammonia [illegible] B. P. was injected into it with the hypodermic syringe. The dog lay still for a moment, and was then raised, he howled loudly and fell on his belly, the legs being unable to support his weight. Lay in that position in a general state of tremor, involuntary defecation and micturition taking place.

[illegible] convulsions [illegible] every muscle of the body; pupils widely dilated.

2-52.—Lies on his side in a state of unusual muscular twitching; unable to rise or to walk when raised.

2-55.—Starts up and tries to run; falls down; is unable to rise [illegible]

[illegible] when raised; no tremor now; breathing hurried and deep.

[illegible] got up; [illegible]

[illegible] refuses water when offered; [illegible] profuse salivation and frothing at the mouth.

3-13.—Sitting up; licking the puncture; refuses water when offered. [illegible]

[illegible] occurred. The object of this experiment was to test the effect of the liquor ammonia injected into the venous circulation in an animal [illegible] Professor Haughton and [illegible] suggested by him. The experiment, [illegible]

Experiment No. 2.

[illegible] dog [illegible] Dr. [illegible] Professor [illegible]

[illegible] at 3-6 p. m.

[illegible] staggers [illegible]

[illegible] 3 P. [illegible] hypodermic syringe.

3-9.—Violently convulsed; but raising the head and trying to rise. There could be no doubt that whatever the latter effects [illegible] to make the animal much worse.

3-10.—Stood up; breathing very rapidly; salivation profuse.

3-12.—[illegible] breathing; sitting up and looking [illegible]

3-13.—[illegible]

3-20.—[illegible] to keep the injected leg [illegible]

Remained in this condition, very restless; lying down and rising; [illegible] in both [illegible] in the ammoniacal injection.

3-31.—Lying down; is drowsy.

3-49.—Is lying down; being sluggish with hurried breathing.

4-11.—[illegible] under integument of fore-leg.

4-41.—No [illegible] same place.

3-50.—Is worse; convulsed.

3-53.—Involuntary defecation; breathing catching, and rather [illegible]

3-54.—Dead.

Rigor at 9-6 p. m., fixed at 4-51 in 18 minutes.

The results of this experiment are not favorable to the [illegible] theory. Death took place in about the usual time in which it occurs in a dog after a bite from a vigorous cobra. The effect of the first injection impressed one with the idea that for a time the influence of the snake-poison was in abeyance, but the later symptoms were rather unfavorable than favorable to the ammonia.

Experiment No. 3.

A [illegible] bitten by a cobra in the wing at 3-36 p. m. Half a minute later, I injected twenty minims of the Liquor Ammoniæ into the femoral vein which had been previously exposed.

3-38.—Violently convulsed; the convulsions passing rapidly into a state of general tremor and death. The fowl was bitten in the wing, [illegible] very vascular, that the poison [illegible] no time to manifest its effects, for the injection of the Liquor Ammoniæ was followed by immediate convulsions and death.

Experiment No. 4.

A fowl had ten minims of the same Liquor Ammoniæ diluted with twenty minims of water, injected with the hypodermic syringe under the skin of the thigh.

[illegible] not affected.

9 p. m.—No change.

[illegible] No change.

31st, 8 a. m.—The fowl keeps the leg drawn up, but is not otherwise affected.

Apparently beyond slight local inflammations, no effect produced.

Experiment No. 5.

The dog of experiment No. 1, having perfectly recovered, had [illegible] injected [illegible] at 3-5 p. m. of the [illegible] May. He was then bitten in the right fore-leg by a fresh full [illegible]

3-56.—Sits down, lies down, rises and walks about, limping on the bitten leg.

[illegible]

1-2 p. m.—Rises and walks about with uncertain gait.

[illegible]

4-6.—Stands, but is unsteady, head hanging down, and with salivation.

4-11.—Staggers in his walk.

The dog had only one bite, and the poison is now evidently taking effect; so 40 minims of the Liquor Ammoniæ were carefully injected with the hypodermic syringe into the jugular vein, the greatest care being taken not to admit any air with the fluid. The dog was immediately convulsed violently, fell over, was quite unable to stand; the convulsion passed into rapid jactitations of all the muscles.

4-15.—Perfect muscular exhaustion, hurried breathing.

4-18.—Injected twenty minims more of the Liquor Ammoniæ into the vein. Convulsive movements again became universal, pupils dilated, involuntary micturition, twitching of the mouth, lips drawn up, exposing the teeth, lips pallid, breathing catching and slow.

4-20.—Dead.

In this instance unusual care was taken to perform the experiment with exactness. No air was allowed to enter the vein, and the ammonia was most carefully injected with the hypodermic syringe. The steps of the operation were most carefully carried out by Dr. Ewart and myself.

The dog was bitten only once in the fore-leg. The poison did not manifest its effects so quickly, or in so marked a manner as in dogs bitten twice or thrice in the muscular part of the thigh, and this was purposely done that we might watch the progress of the action of the poison, and inject the ammonia at the right time. The ammonia was injected at 4-13 p. m., or in 18 minutes after the bite. Convulsions came on immediately, and these were followed by complete muscular prostration; at 4-18, or five minutes later, twenty more minims of the ammonia were injected into the jugular vein; a repetition of the same phenomena followed, and the dog died, completely exhausted, at 4-20. That is two minutes after the second injection, or seven minutes after the first, or in 25 minutes after the bite.

There can be no reasonable doubt that the injection of Liquor Ammoniæ into the external jugular vein in this case hastened, if it did not cause death; and whatever other deduction may be drawn from the experiment, this is inevitable that the proceeding is a dangerous one. In this case death occurred, in the first experiment the animal's life was in peril. The result is very different from that obtained by Professor Halford in his experiments, where he injected Liquor Ammoniæ not only into the jugular vein but into the heart itself, though I must at the same time confess that I cannot regard the latter experiment at all satisfactory or conclusive as to the beneficial effects of the ammonia. It proves the absolute necessity for many and most carefully repeated experiments, before one can come to an absolute decision on a subject where there are probably several sources of error to be encountered.

Experiment No. 6.

The following experiments were made with the view of determining the influence of one poisonous snake on another. I have already made many experiments on this interesting question, and though so far the weight of evidence is in favor of immunity of the poisonous snakes to the poisons of their own species, and those of others, yet I cannot regard it as a matter settled, but one about which there is still doubt. I must have further and more convincing proof before I can accept as a fact what I even now hardly believe, that a venomous snake, whilst it has the power of quickly destroying innocent snakes, has no power over its own, or the other poisonous species. Of this, however, there can be no doubt, that the effect of the poison is much less active on a venomous snake, than on an innocent one.

A Bungarus fasciatus about six feet in length, was bitten about a foot from the tail by a full grown fresh and powerful cobra, at 3-18 p. m. Again, at 3-19; a third time at 3-20 p. m. All the bites were within a foot of the end of the tail. The object of selecting this part of the Bungarus was to avoid the possibility of death being caused by injury to the viscera. The Bungarus was then put into a cage.

4-40 p. m.—It seems quite well.

9 p. m.—Appears sluggish; the part of the tail below the bites appears partially paralysed. On pressing the tail with a sharp-pointed instrument but little sensibility is manifested.

30th May, 6 a. m.—Very sluggish; skin contracted into a longitudinal crease along either side of the body.

9-40 a. m.—Dead.

The Bungarus was a very large specimen, it was moulting at the time it was bitten; but still I think its death must be attributed to the influence of the cobra poison.

Experiment No 7.

A full grown spectacled cobra was bitten within a foot of the tail, by a Daboia Russelli, about half grown, but which was said to be fresh, and had been brought that day by the snake-men. There was some difficulty in making the viper insert its long slender fangs into the tough skin of the cobra, but it did so, finally, in several places. No evil result followed, and on June 3rd the cobra was quite well.

Experiment No. 8.

A Daboia Russelli was bitten by a fresh cobra near the tail, about the same time as that of the last experiment: the bites were several, and fangs well inserted. But no evil result followed, and, on the 3rd June, the viper was unaffected.

Experiment No. 9.

Some cobra poison, taken from the poison-gland, several months ago, by Mr. Sceva, had been kept, and had coagulated in the glass-tube in which it was kept, into a white caseous-looking solid mass, with an intensely fœtid odour. Some water was mixed with this in which it was only partially soluble. Ten drops of the opaque fluid were injected with the hypodermic syringe into a pigeon's thigh, at 4-20 p. m. No immediate result followed.

4-25.—Ten drops more of the same fluid injected as before.

9 p. m.—No apparent change in the bird.

May 30th, 6 a. m.—Lying down; wings drooping.

10-5 a. m.—Dead.

This experiment shews that decomposition and coagulation of the poison, does not, even after a long time, deprive it of its poisonous properties.

Experiment No. 10.

5th June, 1869, at 3-2 p. m the right external jugular vein of a healthy dog was laid bare. Chloroform was then administered until the dog was insensible, though still whimpering with a peculiar cry. Forty drops of Liquor Ammoniæ sp. gr. ·959 were carefully injected into the jugular. Immediate restlessness followed; limbs convulsed; howled loudly as though it felt acute pain, and when placed on the ground was unable to stand, the legs being powerless.

3-16.—Lying quiet.

3-17.—Pawing his mouth and face in a semi-paralytic manner; makes unsuccessful efforts to stand.

3-18.—Lying prone; unable to rise on his legs; paws the face; when put on his feet cannot stand; seems quite sensible and intelligent.

3-20.—In just the same condition; crawls, but is unable to stand on his legs.

3-21.—Sat up, but fell over again.

3-23.—Forty drops more were injected. It was doubtful, this time, whether the ammonia entered the vein, probably into the areola tissue about it.

3-25.—Forty drops injected this time certainly into the vein; the dog at once passed into a state of violent convulsion, and from that into a state of general tremor.

3-27.—Able to rise, and stagger a few steps.

3-30.—Recovering; the dog is and has been for some minutes profusely salivated.

3-33.—Running about the room; seems to be intelligent, but has peculiar nervous twitchings of the mouth and face.

4-30.—The dog had perfectly recovered; the crusal vein exposed, and forty minims of Liquor Ammoniæ sp. gr. ·959 injected, almost immediately succeeded, by violent convulsions.

4-33.—Howling as if in pain or fear, legs paralysed; struggles in the prone position, but cannot stand.

4-40.—Breathing hurried; pulling at buccinator muscle; twitching of the muscles.

1-12.—[illegible]

1-15.—[illegible]

In the case the animal poisoned, the same symptoms of poisoning were followed by constant convulsions, muscular tremors and other [illegible]

In the other [illegible]

EXPERIMENT N— 14.

3-37 p.m.—A large dog had the right external jugular vein laid [illegible]. It was bitten in the right hind leg by a spectacled cobra, and had been in confinement for some time. The punctured leg and the neighbouring parts were [illegible] with the snake's mouth.

3-47.—Sitting down: rises and walks with rather a tremulous gait.

3-48.—Lies down: deep respiration: breathing hurried.

3-55.—Symptoms of poisoning not at all pronounced—there is reason to doubt the vigour of the cobra.

4 p.m.—Bitten again by a vigorous cobra in the same place: the leg immediately partially paralysed.

4-1.—Urinates: walks the usual.

4-2.—Walks: gait is very restless.

4-3.—Heart thumping.

4-4.—Breathing very rapid: [illegible] tongue hanging out; whining: [illegible] walks restless.

4-5.—Walks about whining; droops his head, and lies down; still strong on his legs.

4-8.—Can walk but is evidently under the influence of the poison; staggers, pants, and droops his head.

4-10.—Forty minims of the Liquor Ammoniæ ·959 injected into the jugular vein; vomited; micturated violently whilst passing into a state of violent general convulsion.

4-12.—Stood up; breathing was hurried; is salivated.

4-15.—Shows weakness in the hind legs: lies down: is purged.

The symtoms of snake-poison becoming more marked.

4-17.—Injected forty drops more into the jugular vein; staggers, convulsed, and falls prone with the legs spread out.

4-20.—General paralysis: pupils widely dilated; tries to vomit: [illegible] of urine.

4-22.—Twitching of all the muscles.

4-23.—Completely paralysed.

4-24.—Catching respiration; involuntary micturition.

4-25.—Dead.

HEAT APOPLEXY.

BY W. K. WALLER, M.R.C.S., &c., FEL. U. C.

THE mortality from heat apoplexy, as shown by Dr. Bryden's [illegible] in the 10 years, 1858 to 1867, 61-37, or more than half the cases attacked. The proportion of deaths from cholera is little more. It is not my intention in the observations I propose to make, to enter into the causes and pathology of this disease. I may have been [illegible] in the pages of the *Indian Annals of Medicine*, and by Macdonald, Aitken and Maclean in their pages I refer you. My object is to direct attention to a mode of treatment hitherto apparently unknown, and I shall subjoin a list of cases occurring between 1856 and 1867, the majority of which were treated by the method I propose to speak of.

It may be thought that the result, judging from past experience, [illegible] to be eligible to [illegible] have been taken. It [illegible] in charge the [illegible] for years, and every [illegible] occurred. Those that [illegible] were treated otherwise than as I propose.

The [illegible] of the means and the result shown should command the [illegible] in treating this serious disorder. I am certain that whenever [illegible] will [illegible] and that [illegible] will no longer show [illegible] per cent. of deaths.

The treatment proposed is simply large doses of quinine by the mouth, or hypodermically, if the patient is unable to swallow. Probably the hypodermic method may prove to be the best and most convenient mode in all cases. It is at least applicable to an [illegible] stage.

I am enabled, through the kindness of my friend Dr. Hall, R. A., to give a case of recent occurrence in which its success was most marked. The precise means of applying the remedy will appear from the cases cited. I have as yet said nothing of cold affusions. I use it in almost all cases where there is great heat of surface; that it is not absolutely necessary is seen from Dr. Hall's case, and another which I shall give from my own experience. In cases of the cardiac variety, with cool and moist skin, it is of course inadmissible. Cold affusion is a valuable aid, but the remedy pure and simple is *quinine*. I give two cases of the cerebro-spinal form:—

H. B., gunner of the *Golconda*, admitted into the P. & O. Hospital [illegible] P.M.

26th May, 1866.—He had fallen from his seat whilst at tea. The surgeon who was called to see him, applied ice to the head, leeches to the nape of the neck, and gave a powerful purgative which took no effect. I saw the man almost directly after admission. He was speechless, his skin burning hot, pulse running, hardly to be counted, he could still swallow. I gave him 9j of quinine at once, and ordered 10 grains to be repeated every hour till he spoke. I considered him a most unpromising case; after the second 10 grain dose he spoke; nevertheless my apothecary continued the quinine, so that, by the time I paid my early morning visit, the man had taken 70 grains. He was then cool, sensible, able to sit up or even walk about, could speak, and complained of headache; the quinine was continued in five grain doses, at gradually increasing intervals, and the man was discharged on the 9th June to his duty. The *Golconda* sailed for Suez that morning, the man had been kept in hospital, though well some days before, as a matter of precaution on account of the great heat. For the following case I am indebted to Dr. Hall, R. A., whose notes I abridge:—

T. B. Driver, R. A., being in the hospital for ague, and being treated for this disorder by cinchonine, was attacked at 5-30 P. M. on the evening of May 15th, with heat apoplexy. Dr. Hall found him perfectly comatose, pupils rather dilated, (a sign of approaching death), skin burning hot, pulse full, 134, convulsive movements of arms and legs, grinding of the teeth, and gurgling in the throat. Three grains of quinine were at once injected under the skin near the deltoid, one and half grain into each arm; in half an hour the convulsive movements were less, and he seemed better. In an hour he was able to swallow, and had 10 grains quinine given in water. At 8 P.M. he had 10 grains more, the convulsive movements had then ceased, pulse about the same. At 10 P. M. 10 grains more. He was then conscious, and said he felt better. At 1 A. M. he was sleeping quietly. On the 17th, says he feels all right, has no headache, is to have five grains of quinine three times daily.

27th.—Up to date no bad symptom, no return of ague, is quite well, and discharged to light duty.

Now both these cases are remarkable, because in them the quinine was the only remedy used. In both cold water was very partially employed, but in no such manner as could be classed as cold affusions. Quinine and that only saved these men. The three grains hypodermically injected may be taken to represent 12 grains given by the mouth.

I will now briefly give two cases of the cardiac form of headache, in which the remedy was equally successful.

In March 1866, the 2nd Officer of my ship *Nubia* went on shore at Galle with the Captain to take sights by means of the artificial horizon. He was on shore about two hours, exposed to the early morning sun with a small cloth cap only as a head-dress. Returning on board he went to [illegible] and [illegible] He complained of intense headache and inability to sit up or stand, his pulse was slow and laboured, his skin cold and clammy, he was very pale. I gave him 10 grains quinine at once, and repeated the dose in two hours. He was quite relieved by the afternoon.

Again, an artilleryman marched with his comrades from the artillery station at the Mount into Madras for embarkation on board the *Nubia* in January, 1858. The march took place between 3 P. M. and sunset. The men were all in thick cloth clothing and forage caps. This man was brought to me at once on coming on board. His symptoms were identical with those given above. He had two ten grain doses of quinine at an interval of two hours, and was well the following morning.

How does quinine act in these different forms of illness, produced by the same cause, the direct application of the sun to the human body? Whether is it a direct nervine tonic as has been suggested to me by Dr. Chevers, or does it first act by relieving local congestions about the lungs and medulla oblongata, and afterwards exert its influence on the nervous system?* I confess, I do not feel competent to explain this; but that my inability to do so need not, and ought not to lead to the rejection of my proposal without enquiry, may be granted, when we reflect that "the *modus operandi* of iridectomy in glaucoma is not yet understood; but it has proved the remedy by which the largest number of patients suffering from glaucoma are relieved." "Bader on the Human Eye," preface page 7. Then, I say, in any case try the remedy, give it boldly, confidently, and I have no doubt that all who *do* try it will be as gratified as I am with the results.

The following cases, given in a tabular form, have been treated in the Hospital of the P. and O. Company, in Garden Reach, chiefly by myself, and, except the fatal cases, on the principles I have proposed:—

	Rank.	Date of Admission.	Date of Discharge.
1	3rd Officer ...	12th September, 1858 ...	30th September, 1858.
2	Clerk ...	31st December, 1858 ...	5th January, 1857.
3	Boiler Maker	8th June, 1858 ...	Admitted 4-30 P. M., died 8 P. M.; Dr. L.'s case.
4	Steward ...	23rd April, 1859 ..	29th April, 1859.
5	Mariner ...	16th May, 1859 ...	23rd May, 1859.
6	Steward ...	7th July, 1860 ..	13th July, 1860.
7	Steward ...	9th April, 1861 ...	16th April, 1861.
8	Plumber ...	24th June, 1861 ...	27th June, 1861.
9	Boiler Maker	2nd October, 1861 ..	12th October, 1861.
10	Quarter Master	21st April, 1862 ...	27th April, 1862.
11	Fireman ...	31st May, 1862 ...	3rd June, 1862.
12	4th Engineer .	9th September, 1862 ...	13th September, 1862.
13	Engineer ...	25th September, 1862...	29th September, 1862.
14	Engineer ...	8th June, 1863 .	15th June, 1863.
15	Boatswain ...	1st July, 1863 .	17th July, 1863.
16	Carpenter ...	24th June, 1864 ...	27th June, 1864.
17	4th Officer ...	3rd May, 1865 ...	5th May, 1865.
18	Oiler ...	29th July, 1865 ..	9th August, 1865.
19	Gunner ...	26th May, 1866 ...	9th June, 1866.
20	Engineer ...	1st May, 1866 ...	3rd June, 1866.
21	Steward ...	8th June, 1866 ...	15th June, 1866.
22	Plumber .	5th September, 1866 ...	19th September, 1866.
23	Steward ..	26th May, 1867 ...	Admitted 6-30 P. M., died 11-20 P. M., not seen by me, treated by calomel and croton oil. Dr. H.'s case.
24	Steward ...	29th May, 1867 ..	2nd June, 1867.
25	Engineer ...	18th August, 1867 ..	23rd August, 1867.
26	Gunner ...	2nd September, 1867...	Admitted 6-5 P. M., died 6-30 P. M., no quinine given. Dr. M.'s case.
27	Steward ...	28th May, 1868 ...	3rd June, 1868.
28	Steward ...	26th June, 1868 ...	30th June, 1868.
29	Engineer ...	26th June, 1868 ...	30th June, 1868.
30	Fireman ..	20th March, 1869 ...	23rd March, 1869.
31	Steward ..	20th April, 1869 ..	22nd April, 1869.

These cases are put down in their order of occurrence; there have been other instances of less importance, which I have not noticed. The above were all true cases of insolation, chiefly from exposure, or working in close stifling atmospheres; the treatment of all was uniform—cold douche and quinine.

The three fatal cases I did not see at all. In concluding these brief remarks I urgently and earnestly ask my medical brethren to try this great remedy for this terrible disease. Can you doubt that your success will equal mine? I hope not, I think not, try it and time will show.

* Dr. Headland considers its first action is on the blood; see his book on the Action of Medicines, p. 147, and op. cit. Article, quinine.

POST PARTUM HÆMORRHAGE; DEATH FROM SHOCK.

By J. Fayrer, M.D., C.S.I.

On Sunday morning, 23rd May, 1869, I was sent for to see Mrs.——whose expected labour (primipara) had commenced. I found that she had been suffering more or less since the previous evening; the pains were irritating and fatiguing, and had disturbed her rest throughout the night. I made an examination during one of the pains, and found the os uteri high up and pointing towards the sacrum; it was not dilated sufficiently to admit the point of the finger. The bowels were confined, so I ordered a dose of castor oil, and an enema if necessary. I saw her again later and made another examination; the pains were continuing as before, there was no change. The oil had caused sickness; the enema had proved effective; the bladder had also been emptied. Her pulse was natural, her skin cool and moist. The tongue was moist but slightly coated in the centre. I saw her again during the day, little or no progress had been made, by evening, in the dilatation of the os which was rigid, with its margin thin and tense. There was no change in the position of the head which presented, and was as high as ever. She complained much of the fatigue and worry of the incessantly recurring pains, but constitutionally she was unaffected. Her pulse, tongue, and skin were all as they were in the morning. The passages were moist and cool. The fœtal heart was distinctly audible and there was no indication of constitutional disturbance of any kind. During the day she had been sick after the oil, and had vomited some bilious matter. She had taken a sufficient supply of fluid nourishment, and a little wine and water occasionally. To give rest, I ordered, after the bowels had acted, liq. opii, min. xxv. It was repeated at bed time, but she had, on the whole, a restless and disturbed night. I found her on the morning of the 24th looking tired and anxious, but all her symptoms were good, pulse about 86; tongue moist and clean; skin cool and moist. The os uteri was now found to have dilated to about the size of a shilling, and was rigid. I prescribed small doses of antimony, ½ grain to be given every hour with the view of causing relaxation. After taking three or four doses, she was sick, and it was discontinued; I also put her under the influence of chloroform for a few minutes, on two or three occasions. During the day she took an ample quantity of nourishment; the bowels were relieved, and constitutionally she was as well as ever. Towards evening I became rather uneasy about the non-dilatation of the os uteri, and I expressed my intention to her husband, if, by 9 P. M. more satisfactory progress was not made, to have a consultation. At 9-30, I made another examination, and ascertained that some progress had been made. The os was now about the size of a rupee. She had slept at intervals, and her pulse kept steady; the tongue clean, and the skin was cool and moist. I saw her frequently during the night, as I remained in the house, and was satisfied that progress, though slow, was being made. At 10 A. M. of Tuesday, the 25th, the os had dilated to the size of the rim of a wine glass. As all her symptoms, beyond the delay, were favourable; the pulse under 100, tongue clean and moist, skin and passages moist and cool, fœtal heart vigorous; interference was uncalled for. The pains continued, but, perhaps, with more rapid succession, and by 12-30 the second stage of labour had commenced. The head was now well down, and the character of the pains changed. The expulsive efforts continued at regular intervals, and at 5-40 P. M. when partially under the influence of chloroform, she gave birth, with little difficulty, and without the least laceration of the perineum, to a large male child.

The infant was partially asphyxiated, having the cord twice round its neck; but on releasing the cord, using artificial respiration, and dashing cold water on the face and chest it soon breathed and cried vigorously. The cord was then tied and divided. The uterus meanwhile had contracted firmly, and in from fifteen to twenty minutes the placenta was spontaneously expelled; up to this time she had not lost an ounce of blood. I should have noted, that the membranes ruptured at about 10 A. M., and that the liquor amnii trickled away with each pain, but there never was any protrusion of a bag of membranes to aid in dilatation. Soon after the placenta had come away, the uterus being firmly contracted, the pad

and her aid was applied. She was looking well, looking well and was much delighted at the birth of her child. Her pulse was peculiarly good, regular, full and firm. Indeed it was remarkable how well she bore the second stage of labour, her strength which had been failing towards the close of the first stage returned to her as soon as the pains passed away, and her pulse which had quickened though never over 112 was soon almost its normal standard. I then left the room at about 6.15 P.M., when the nurses arranged her bed and clothes. In a few minutes I went into the room again to see how she and the baby were doing. While I was speaking to her she said she felt unwell, and had a violent pain in her back. This was about thirty-five to forty minutes after the birth of the child. I put my finger on her radial artery, and found the pulse had suddenly quickened. I immediately had the binder removed and found that hæmorrhage had begun. The uterus had relaxed, and was distended with blood. I immediately removed the clots with the right hand, grasping the [illegible] with the left, applied ice and sponges of cold water externally and injected cold water into the uterus. I gave hypodermic of ergot, and powdered ergot shortly after, and applied the magneto electric current, the instrument being brought immediately. The child was also put to the breast. With these measures the uterus contracted firmly, and remained so to the last. The quantity of blood lost could not have exceeded two pounds. She was considerably depressed, but did not at the time lose the usual colour of the lips and eyelids; the pulse was rapid and irregular, but her voice was good, and she seemed free from alarm, when in reply to her query she was told that the bleeding had been controlled. She did not faint, neither did she manifest, at this time, the usual symptoms of dangerous hæmorrhage. She was quiet, and spoke calmly and cheerfully about herself. I gave her brandy and water freely, beef-tea, and brandy; mustard poultices over the heart, solar plexus, and on the back. Brandy was also given in the form of enema, and hot bottles were applied to the extremities; but her condition did not improve. The pulse became weaker, and more rapid, and irregular; she was restless, and the surface of the body bedewed with a cold sweat. The countenance began to change, and signs of collapse rapidly set in. These symptoms did not make their appearance for fully half an hour after the hæmorrhage had ceased. I had, meanwhile, sent my carriage for assistance, and Dr. Chevers, who was the nearest, came at once. There was no return of hæmorrhage, the womb remaining firmly contracted, and not parting with the smallest quantity of blood. During the application of the magnetic battery, and whilst other measures were being taken to ensure uterine contraction, she was in good spirits, held the wire with her own hand, and laughed at the nurse who held the other wire. Reaction never properly set in, she seemed to have no power of rallying, and notwithstanding every effort she gradually sank. The pulse occasionally rose slightly, giving a deceitful hope of improvement, but it was [illegible] moments she slept, but at last the breathing became hurried, as though pulmonary obstruction was taking place from coagula forming in the right side of the heart. She had become [illegible] talked for a short time incoherently; and then sank and died quietly, at about 9.30 P.M., three hours and fifty minutes after the birth of the child, and about three hours and a quarter after the occurrence of hæmorrhage.

There are some points of interest to be considered in a review of this sad and interesting case. The patient was a young English lady, age 23, who had been married about ten months, and been in India four months. She was of a fair and [illegible] though rather slight frame, her general health good, nor was there anything in her appearance suggestive of [illegible] to vital force. She was said to have had an easy time of it during her first pregnancy, and was considered to have been in every way constitutionally weakened thereby. She had passed through the period of her pregnancy without much inconvenience, and had completed the full time when labour commenced.

The progress of the first stage of labour was unusually slow, the commencing on Saturday evening it was not until Tuesday at noon that the head had passed through the cervix and entered on the second stage of labour.

Indeed after the membranes were ruptured no interference, beyond simple dilatation by the fingers of the [illegible] appears to have been attempted, and no operative measure was considered necessary, and the result proved that such was the case, for the second stage of labour was completed within six hours, and she gave birth to a vigorous and healthy child [illegible] with [illegible] the placenta the womb contracted firmly, and up to this period there had been [illegible] The [illegible] of blood was sudden, but it was rapidly arrested; and though, in the first rush of hæmorrhage, a considerable amount of blood was lost, there was no repetition of it; the uterus, after being relieved of the clots, contracted firmly, and there was no recurrence of the hæmorrhage.

The amount of blood lost was [illegible] of impending death. Much more has been lost in other cases, and yet perfect reaction and recovery have followed. But there are certain constitutions that seem to be endowed with but little power of rallying from a shock, even though slight, and in whom the vital energy, though equal to all the ordinary emergencies of life, is inadequate to the task of recovery when any considerable [illegible] the nervous centres.

In such, no doubt, the great heat of a Calcutta May, and its terribly depressing influence must be an additional source of weakness, and a most important element in producing what may [illegible] shock to the nervous system has taken place.

[illegible] should occur from syncope from great exhaustion in profuse hæmorrhage, either when the blood is flowing, or immediately after it has ceased to flow, is, though fortunately uncommon, yet sufficiently intelligible, and needs no explanation in any real or fancied constitutional defect in the sufferer; but that death should follow a comparatively moderate loss of blood, and when all else was apparently free from defect or disease [illegible] and [illegible] as to the conclusion that, in a constitution naturally inert as to vital power, the influence of climate, such as that of Calcutta in the hottest season of the year, must have had a prejudicial effect in preventing the reaction which, in other cases, under ordinary circumstances single [illegible] hopefully anticipated.

I am satisfied that the labour itself had nothing to say to the unfortunate result. The [illegible] stage was certainly very tedious, but it was neither attended with, nor followed by, any failure of constitutional strength. The second stage was accomplished with vigor, and after the birth of the child, the patient was, in all respects, as well as one could have desired to see her. I have frequently noticed that loss of blood in a surgical operation that would hardly affect one person, proves almost, if not quite, fatal, to another, each being to all appearance equally strong—the difference is due, no doubt, to different degrees of vital energy in the individuals, so, in the case I have described, I can only ascribe death to a similar cause.

APOPLEXY.

By T. Farquhar, M.D.

"Apoplexy" has carried off 1,602 soldiers within the decade noted in the margin, nearly half of whom, however, fell victims to it in one year, 1858, the year of the first arrival of a large body of men from England, and of the mutiny campaign. A year, as Dr. Bryden expresses it, "of the experience of an unclimatised army in its first year of service in India." Upto 1864 the cases were all registered by Dr. Bryden in his return as heat apoplexy, for that year and since, apoplexy is the term used.

Years.	Deaths.
1858	778
1859	258
1860	125
1861	60
1862	54
1863	44
1864	56
1865	118
1866	75
1867	84
	1,602

In this disease we require, for sanitary purposes, a more distinguishing classification of the causes of death, for the term apoplexy implies to the English reader solely an affection of the substance of the brain, and though some of the deaths enumerated in these tables may be instances of the disease so common in England, it is not [illegible] not of common occurrence among the young soldiers of India. For practical purposes, we may assume, therefore, that the deaths from apoplexy here recorded are from "heat apoplexy," the term used for all apoplectic cases down to the year 1864.

But again, though "heat apoplexy" is the best name yet applied as a general term to all the fatal cases that occur under this head of excessive heat are the real causes of deaths, yet we must

sub-divide the disease still further, and have in the returns two distinct terms, *viz.*, *coup de soleil* or sun-stroke, and ardent fever. The necessity for this will be acknowledged if we are to understand aright the preventive measures required to save life from this deadly disease.

But first of all the symptoms of these two diseases are not identical, nor is their cause the same. A man struck down by the sun, while exposed to its direct rays in a hot day in India, falls to the ground in a faint, and dies almost immediately, or in an hour or two, of syncope. The body may be hot, but there is at first pallor, and afterwards congestion of the face, from impeded circulation in the blood.

"Ardent fever," on the other hand, comes on more gradually; a sense of oppression and giddiness with all the distress which accompanies the hot stage of fever is complained of, or sometimes stupor comes on rapidly, and terminates suddenly in apoplectic symptoms. One other symptom is prominent above all others in this form, *viz.*, intense heat of the body.

The cause of the one set of cases is the direct influence of solar heat in an intensely hot atmosphere. The cause of the second is extreme heat without necessary exposure to the sun, but apparently the effect of an exacerbation of fever while surrounded by a very high temperature.

Both causes may sometimes be operating on a body of men at the same time; but fortunately no opposing preventive measures or medicinal treatment have to be recommended for the relief of the sufferers. Bearing in mind these two forms of the disease we have a ready clue to the differences observed in the mortality during the different months in the decade under review.

While the army was in the field in 1858 and 1859, and but poorly housed in 1860, we see a very high death-rate from heat apoplexy. The most remarkable loss was in May, 1858, when 426 deaths occurred out of 929 cases. Many of these must have been instances of *coup de soleil*, as the men had to be continually in the sun.

This as a cause of mortality cannot be avoided in times of war, but the records of many instances of loss from sun-stroke point to several causes through which some corps lose many more than others. One of these is exhaustion from (1) over-exertion, (2) want of sleep, and (3) want of food; it may not be possible in the face of the army to avoid the first of these. Great care to prevent unnecessary disturbances and alarms in camp at night will provide against the second cause, this is attended to in some regiments and disregarded in others, but should be impressed on all commanding officers as a point of the first importance in the preservation of the efficiency of a corps, and warding off this and other sickness. The third is, perhaps, the most important and most easily provided against cause of *coup de soleil*. In some regiments the men before leaving camp in the early morning have something to eat and drink. In such corps *coup de soleil* is, as a rule, very rare, while men who march in a hot sun on an empty stomach are very liable to fatal faintness on the march, or soon after their arrival in camp.

I cannot help believing, too that the belt across the chest assists in that congestion of the lungs from which death occurs in these serious cases. The sooner the new belts, like braces, are introduced into India, the better for the men, as the constriction they now suffer from over the chest will thereby be relieved.

The second form of heat apoplexy, called very appropriately "ardent fever" from the fierceness of the heat of the body of the patient, is seen to occur inside barracks and hospitals, and during the night as well as during the day. From the returns it is seen that after 1860, when the exposure in tents on the campaign ceased, this form of apoplexy occurred most severely, not in May, as it did in the years of campaigning, but in June and July. The numbers standing thus for four months from 1861-67.—

May.	June.	July.	August.
49	140	149	46

In May the heat is untempered by the falling of rain, hence in camp life we can understand how the sun is then most powerful in destroying life *per se*. In June and July fevers are more abundant, and the heat still very great, hence we see fever once developed passing into the "ardent" form, and destroying life with apoplectic symptoms. The comparative immunity of cholera camps during the rains, from the so-called sun-strokes, is no doubt accounted for by the absence of the fevers so prevalent in barracks; we have also exemption from those fatiguing marches and want of sleep and food, that are so destructive to life on a campaign.

The month of June also, is by far the most apoplectic time for native soldiers and prisoners, as the following table shows:—

Total deaths from apoplexy in the years 1864-65-66-67.

	Sepoys.	*Prisoners.*		*Sepoys.*	*Prisoners.*
January ...	2	9	July ...	3	17
February ...	1	10	August ...	5	8
March ...	2	5	September	1	6
April ...	1	8	October ...	2	10
May ...	4	9	November ...		12
June ...	5	44	December ...	2	6

Average strength for the four years in question.

Sepoys ... ... 36,485. Prisoners ... ... 54,802.

We can easily understand this when we think of the steamy heat of the first part of the rains, especially at night, when a dense hot stillness and utter stagnation in the atmosphere prevails.

It is remarkable to note in the above table, the difference between the seizures of the sepoy and the prisoner; the former is not pent up in a barrack, breathing vitiated air as the latter is; any one who has visited a jail barrack in the early morning succeeding a hot still night will understand what risks the prisoners run who breathe such tainted air.

We find in Dr. Bryden's tables such numerous examples of heat apoplexy accompanying increase of fever in barracks, that for a diminution of this form of death the same recommendations would apply to preventive measures for each.

1. Subsoil drainage.
2. Segregation of the men.
3. More perfect means of keeping the barracks cool.

This last is the essential in the disease, and can certainly be aided by a diminution in size of barrack rooms. Artificial ventilation for three months of the year, such as is given to prisoners in solitary cells in the Agra jail would effect this, and doubtless save many lives.

The importance of sanitary and preventive measures, probably of the nature above noticed, is doubly urged on our attention by the characteristics of this disease. Next to cholera this is the most fatal form in which death attacks either Europeans or natives in India, and like cholera, this disease can be effectually dealt with only in its first stage, and then it is very amenable to treatment.

When, however, apoplectic symptoms have fairly set in, or have lasted for some time, no means yet tried are effectual in rousing the patient. The insidious or sudden character of the onset of this, as of all forms of apoplexy, and the inability from insensibility of the sufferer to give notice of his state, is the most frequent cause of death.

Seeing this is the case, the principal means of saving life are to be supplied in the barrack room, rather than in the hospital.

As regards the disease and its treatment, it appears that the cases that occurred from sun-stroke were less deadly than those from ardent fever. The accompanying table for the decade shews that before the troops were housed in barracks, that is during 1858, 1859, and 1860, the mortality was less than it subsequently became.

Year.	Heat apoplexy; deaths to admission.
1858	41·36
1859	47·28
1860	41·52
1861	61·22
1862	64·58
1863	47·87
1864	67·74
1865	52·80
1866	48·67
1867	41·09

From 1862, the deaths to the proportion of men attacked has materially lessened, though still very high. The hope is that a general improvement in the treatment has effected this change, though the reduced amount of remittent and continued fevers, which are so intimately connected with the more severe form of this disease, may account in a measure for the good result. Many of the cases, too, that occurred were doubtless from "sun-stroke," as a large number of men had to go into camp on account of cholera.

SUMMARY OF FIFTY POST-MORTEM EXAMINATIONS OF INHABITANTS

By KENNETH MCLEOD, A.M., M.D., L.R.C.S.E.

(Continued from ...)

TABLE

No.	I. General Condition.	II. External Appearances.	III. Cranial Cavity.			IV. Thoracic Cavity.					
			Scalp & Skull.	Membranes.	Brain, &c.	Larynx & Trachea.	Pleurae and Lungs.	Right Lung.	Left Lung.	Pericardium.	Heart, &c.
21	Extremely emaciated.	Bed-sores on left side of back; bladder inactive.	Healthy.	Pia mater [illegible], with effusion.	Congested.	Healthy.	Right pleura [illegible] adhesions; left [illegible]	Collapsed and carnified.	Congested and œdematous.	Contained a large quantity of serum.	Contracted, [illegible] cavities.
22	Much emaciated.	Nothing noted.	Healthy.	Healthy.	Healthy.	Healthy.	[illegible] adhesions [illegible]	Congested, [illegible] posteriorly and anteriorly.	Upper lobe hepatized; [illegible] congested.	No fluid; pericardium [illegible]	Right auricles, and ventricles [illegible]
23	Well nourished.	Nothing noted.	Healthy.	[illegible] congestion; [illegible] effusion.	Much congested.	Healthy.	Healthy.	Hypostatic congestion.	Hypostatic congestion.	Healthy.	Right [illegible] healthy.
24	Extremely emaciated.	Feet œdematous.	Healthy.	Considerable serous effusion.	Pale and œdematous.	Healthy.	Old adhesions on both sides; serum in both cavities.	Pigmented and œdematous.	Pigmented and œdematous.	Contained a small quantity of serum.	[illegible] [illegible]
25	Much emaciated.	Nothing noted.	Healthy.	Healthy.	Healthy.	Healthy.	Right pleura [illegible] adhesions; [illegible] engorged.	Upper lobe hepatized; rest engorged.	Congested.	Healthy.	[illegible] [illegible]
26	Extremely emaciated.	Nothing noted.	Healthy.	Considerable serous effusion.	Whitish, semi-transparent and œdematous.	Healthy.	[illegible] adhesions on right side.	Hypostatic congestion.	Hypostatic congestion.	Healthy.	Right [illegible] [illegible]
27	Well nourished.	Nothing noted.	Healthy.	Nerves congested; [illegible] arachnoid [illegible]	Healthy.	Healthy.	Right pleura [illegible] adhesions; [illegible]	Engorged.	Upper lobe engorged; rest hepatized.	Healthy.	[illegible]
28	Rather emaciated.	Nothing noted.	Healthy.	Nerves congested; [illegible] serous effusion.	Healthy.	Healthy.	[illegible] adhesions on left side; recent inflammation.	Middle and lower lobes hepatized; rest congested.	Congested.	Healthy.	[illegible]
29	Well nourished.	Nothing noted.	Healthy.	Healthy.	Healthy.	Healthy.	Previous adhesions on both sides.	Engorged and partially hepatized.	Slightly congested.	Healthy.	[illegible]
30	[illegible]	Nothing noted.	Healthy.	Considerable [illegible] with much effusion.	Healthy.	Healthy.	Fluid in both cavities.	Congested and very œdematous.	Congested and very œdematous.	Healthy.	Patent [illegible]
31	Rather emaciated.	Hands and feet œdematous; joints [illegible].	Healthy.	Veins congested; [illegible] with much effusion.	Punctated.	Healthy.	Healthy.	Congested throughout.	Congested throughout.	Healthy.	[illegible]
32	Extremely emaciated.	Bed-sore on each ankle; small abscesses on [illegible]	Skull thin.	Considerable effusion of serum.	Pale and slightly œdematous.	Healthy.	Contained a small quantity of serum.	Engorged and very œdematous.	Engorged and very œdematous.	Healthy.	Auricular [illegible] healthy.

OF THE JESSORE DISTRICT, PERFORMED IN THE JAIL HOSPITAL.

Civil Assistant-Surgeon, Jessore.

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V.

ABDOMINAL CAVITY.

Parietes and Peritoneum.	Stomach.	Small Intestine.	Large Intestine.	Liver.	Spleen.	Right Kidney.	Left Kidney.	Pancreas, &c.
Filled with serum.	Contracted.	Healthy.	Healthy.	Adhered to diaphragm; contained enormous abscess; tissue fatty.	Enlarged; pigmented.	Large; white.	Large; white.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Nutmeg.	Enlarged and engorged.	Cortical substance slightly degenerated; pyramids congested.	Cortical substance slightly degenerated; pyramids congested.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Healthy.	Soft and friable.	Congested.	Congested.	Healthy.
Healthy.	Contained coffee-coloured fluid.	Portions congested; mucous membrane atrophied.	Atrophied; small circular ulcers near rectum.	Very fatty.	Small and firm.	Misshapen; cortical substance degenerated and atrophied.	Misshapen; cortical substance degenerated and atrophied.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Healthy.	Enlarged, hypertrophied, and engorged.	Healthy.	Healthy.	Healthy.
Healthy.	Contracted and empty.	Mucous membrane of a slaty colour; acute and chronic congestion in patches.	Contracted; ulcers, recent and old, with pigment deposit.	Fatty.	Capsule thickened; organ enlarged and hypertrophied.	Contained cysts; cortical substance atrophied and degenerated.	Contained cysts; cortical substance atrophied and degenerated.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Healthy.	Enlarged and engorged.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Fatty and slightly cirrhotic.	Enlarged and engorged; capsule thickened.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Slightly fatty.	Capsule thickened; strong adhesions around.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy	Congested.	Dark and friable.	Atrophied and degenerated.	Atrophied and degenerated.	Healthy.
Peritoneal fluid viscid and scanty.	Distended with undigested food; mucous membrane sodden.	Filled with a brown fluid; mucous membrane soft and sodden; Peyer's glands distended.	Contracted; mucous membrane soft and slimy.	Healthy; gall bladder distended.	Congested.	Healthy.	Healthy.	Healthy.
Contained a large amount of fluid.	Healthy.	Healthy.	Healthy.	Soft and friable; fatty.	Much enlarged; capsule thickened, substance indurated.	Pale and degenerated, with black deposits.	Enlarged; contained tubercles, soft and friable.	Healthy.

THE INFLUENCE OF COLD IN PREVENTING THE ANÆSTHETIC EFFECT OF CHLOROFORM.

By H. CAVEN,
Civil Surgeon, Lucknow.

I noticed that the chloroform had hardly any smell when poured previously warmed, or else that the man was constitutionally

the previous occasion was due to the coldness of the air. This fact

CANTHARIDES IN CHOLERA.

By C. R. FRANCIS, M.D.

FORTUNATELY for those of our brave soldiers, whose fate it may be to be stricken with cholera in the future, a plan of treatment is

attacked by this fearful foe. I mean, the plan of administering *diuretics* freely; aye, and not only the milder therapeutical agents of this class, but the very strongest, *viz.*, cantharides. The plan of giving cantharides in cholera is not so recent as some would suppose. I

states, that he had employed the *Pulv. Canth.* in combination with

clamorous to have it used in all cholera epidemics. Dr. Ford speaks

was under other modes of treatment, in the hands of his native subordinates it was, according to them, next to nothing.

It would appear that in Madras, cantharides is recognised as an

February, 1867, issued from the office of the Inspector-General of

Dr. John Murray—is supplied to non-medical public functionaries in Bengal. This pill, however, contains opium. There are two kinds of cholera pill directed to be used in Madras, one with, the other without, opium. The latter contains cantharides, the former does

In the hands of an ignorant public, the opium pill, is full of danger; Madras medical authorities.

This pill is made as follows:—

for a dose.

Bengal if I recollect right, introduced by Mr. F. Webber, when

ally met with in prescriptions even now. I have, more than once, addressed the profession in the columns of the *Indian Medical*

to say, more or less success.

to deal with this frightful pestilence, will be induced to prescribe cantharides freely, I am sure they would be gratified with the results. It will be observed that other ingredients which I have recommended for the treatment of cholera, and especially for the collapsed condition, are included in the prescription, though they are not recommended to the full extent I have recommended them.

NOTE ON THE ANTISEPTIC TREATMENT OF WOUNDS.

By JAMES IRVING, M.D.,
Civil Surgeon of Ahmedabad.

THE method of dressing wounds lately introduced by Mr. Lister, of Glasgow, is well known, and its advantages are great. In order to

of excluding air, the professor uses whitening and carbolic acid, made into a substance about the consistence of putty. Dr. Newton, of

a turpentine, or oily product of the Cedrus Deodara, and is said

another substitute for the putty, which I have found to answer very well in the dressing of wounds, *viz.*, a mixture of bees-wax and coal tar. In the cold season a small quantity of linseed or other oil may also

ointment, and is employed as follows: "The wound is first of all

slight bandage, by tape, or by adhesive strapping. Over this a piece

as before, is to be laid. It should be larger than the first piece of

and wax is to be melted over a gentle fire, and when liquid, is to be

until a complete covering of about $\frac{1}{4}$th, to $\frac{1}{2}$th of an inch in thickness

to be laid, and the whole secured by a few turns of a bandage.

According to the quantity of the discharge the outer cloth, smeared with tar and wax, is to be changed every day, every second, third, or

fourth day. The dressing next the wound is on no account to be disturbed, but some fresh oil and carbolic acid may be poured over it; then a piece of lint or cloth soaked in the same mixture is to be applied: then the melted tar and wax: and then the tin-foil as before.

In this way I have treated many wounds and several cases of compound fracture, both at the Colvin dispensary and Railway hospital, and I have now under treatment a case of amputation of the fore-arm which did remarkably well under the above dressing, a considerable portion of the flaps healing by the first application.

Among the workmen in the shops of the East Indian Railway, numerous wounds of the fingers occur almost daily, and these being well washed with the solution of carbolic acid, covered by the oily solution, and lastly by the plaster or ointment of coal-tar and bees-wax, and gutta percha tissue, heal rapidly, and only require to be once dressed if the patient is careful to prevent the dressing being disturbed. From the last number of Braithwaite's Retrospect of Medicine, I observe that Professor Lister now recommends, instead of carbolic acid and whitening, a compound of lead plaster mixed with a fourth part of bees wax. To this carbolic acid is added in the proportion of one-tenth of the whole.

ON LUNAR INFLUENCE OVER MALARIOUS FEVERS.

By W. J. Moore, L.R.C.P.,
Surgeon, Rajpootan Agency.

(Continued from page 114).

I now proceed to give my reasons for still believing in lunar influence over malarious fever, in the face of so much recorded negative statistical evidence. As before mentioned, I consider the disturbing agencies, which must be present, sufficient to prevent the preparation of any trustworthy statistics. For instance, people very frequently do not apply for relief for attacks of fever. Malarious fevers having once occurred in any individual, may be *re-excited* by exposure, debauch, errors of diet, fatigue, solar heat, cold, or mental emotions (*a*). Medicines previously taken, must often interfere with the natural periodical return of the disease. 2ndly.—The evidence of individual cases appears strongly affirmative. Many, both medical men and others, have assured me, they find tendency to, or actually have secondary recurrences of ague, at the period of the springs. Moreover, I could cite a score of instances where I have watched cases of the kind, and the liability to recurrence of either fever or anomalous sensations, not only presents in the tropics, but also, for long after return of the individual to Europe. 3rdly.—Notwithstanding the assertions of Arago and Airey, that the moon exerts no influence on the weather, I confess a leaning to the more popular belief, that she does do so, and in this I am supported by the declarations of other astronomers. Mr. Howard has ascertained, that the barometer suffers a depression of about one-tenth of an inch at the new and full moon, "the consequence of the greater influence of these phases, in comparison with the first and third quarters in the production of regular lunar atmospheric tides, on which the fall depends." If, as appears undoubted, the moon's attraction is the chief cause of the oceanic tides, it certainly seems not unreasonable to suppose that such power must in some way influence the less dense fluid of the atmosphere. That lunar influence or its consequences will excite fever in any person, not already poisoned by what we call malaria, I do not believe. To me it appears, that a *primary* attack of malarious fever has nothing to do with the question of lunar influence. But what I submit is this, that an impression having been once made by malarious poison, paroxymal returns of fever, or other anomalous symptoms coming under the head of that condition, I have elsewhere ventured to denominate "marked malarious fever," are liable to appear in apparent connection with the phases of the moon. The moon influences the weather, either as regards change of temperature, or moisture, or force and direction of winds, or in some more subtle manner, with which we are unacquainted (in the matters of light, electricity, magnetism), and the disturbance of our medium thus resulting, re-excites malarious influences into renewed action.

Holding these views, it will be evident that I do not place much confidence in the attempted explanations of the connection between lunar changes and malarious diseases by the laws of *periodicity*. It has been supposed that there is an ebb and flow in the circulation, corresponding with the phases of the moon, the flood flowing more rapidly, and the *vis vitæ* being more stimulated at the flood, and full than at the ebb, when a reaction takes place proportionate to the previous excitation. In support of this theory, it was noticed by Dr. Mead, that most deaths occur at the ebb of the tide; and indeed this would appear to be an observation of no very recent date, as Shakespeare, who was almost as great a physician (according to the lights of his period) as a poet, makes the death of Falstaff, to take place "just at the turn of the tide. But notwithstanding all that can be advanced on the subject of *periodicity*, to argue that as the moon's changes are periodical, *ergo*, she exerts influence over a periodical disease, is not logical. It might as well be asserted, that lunar power extends over the healthy system, because there is a well ascertained periodical daily disturbance, or rather evening exacerbation, as indicated by the arterial pulse. Or that the moon is paramount over the gestation of animals, or the phenomena of hybernation, or the moulting of birds, or the loss of the first teeth, and eruption of the second set, or the menstrual period, or the flowers of the monthly rose, or any other of the numerous periodical occurences of animal and vegetable life. The simple explanation of atmospheric changes, influencing the malarious system, appears to me sufficient, without involving ourselves in a maze of theoretical arguments regarding *periodicity*.

Neither do I concur in the explanation which has been attempted to the effect that during low ebb tides, a large amount of mud surface is exposed, and consequently more malaria extracted. It is indeed doubtful, if salt marshes, especially those subject to periodical inundations, evolve malaria at all. If the connection between the moon phase and malarious fever were only noticed near the seacoasts, there would be reason for further observations. But persons suffer, perhaps, more at the changes of the moon hundreds of miles up-country, than they do at or near the ocean.

From the foregoing it will also be evident that I do not believe in the *direct* influence of the moon. I propose considering the question of alleged *direct* influence as a cause of certain maladies, *viz.*, nyctalopia, paralysis, swelling of the face, &c., in a second communication.

(*a*) I was very recently assured by a medical officer of standing, that the only time he suffered from ague was after having been on board, after being subjected to great annoyance. In these instances malaria may have been dormant, and re-excited into action by the mental disturbance.

CASES FROM PRACTICE.

CASES FROM OPHTHALMIC PRACTICE.

By J. B. Scriven,
Principal, Lahore Medical School.

HERPES ZOSTER FRONTALIS.

Herpes zoster of the face, though not an exceedingly common form of the disorder is now recognised as one of by no means rare occurrence, and often productive of serious consequences to the eye. It has been described by Mr. Bowman, and M. Jonathan Hutchinson in the Ophthalmic Hospital Reports Vol. V. page 191, and Vol. VI. pages 1 and 181; a case is figured by Hulke and the subject has been lately taken by Macnamara, in his valuable Treatise on Ophthalmic Surgery just published. Macnamara does not say, however, that he has met with any cases in this country, nor have I seen any recorded in the Indian journals.

In the two cases of the first, or ophthalmic division of the fifth nerve above has been affected by the eruption, and hence the disorder generally been called herpes frontalis, or ophthalmic. Mr Bowman however mentions three cases in which the second division was also affected; and Mr Hutchinson in his paper in the last number of the Ophthalmic Hospital Reports, already referred to, relates one, the first he had ever seen of the eruption extending to the cheek.

The following case, which was under my care, in the Medical School Hospital in 1867, affords an additional instance of implication of the superior maxillary nerve. In other respects the case had been treated by Hutchinson's methods, and that the sight of the eye which was [illegible] transitorily inflamed.

pain in the left temple only.

nebulosity still present; vesicles are all dried up;

27th.—Cornea almost clear; vision perfectly good, no pain, slight vascularity of the conjunctiva. Discharged.

[illegible] line; by the smallness of the vesicles; by the special affection [illegible] preceding before the eruption, and persisting long after it, in [illegible] Mr. Hutchinson.

[illegible] comparatively trifling, and was soon relieved by the application of [illegible]

[illegible] cases. I will not recapitulate the descriptions of these very able [illegible] anterior maxillary division of the fifth, in the lower lip.

CASE OF CUTANEOUS ANÆSTHESIA.

By Assistant-Surgeon P. Ittee,

1st B[illegible] Native Infantry.

[illegible] in her thirteenth year.

[illegible] treatment, and even up to the day on which I saw her, fully believed [illegible]

[illegible] 1867, and about a year after the occurrence, [illegible] sharp pains in the [illegible] was the first symptom [illegible]

About six [illegible] birth to another child, that died shortly after from ulceration (probably syphilitic) of the mouth and arms.

It was about this time that she first noticed a whitish spot, in which sensation was completely lost, about an inch above the [illegible] a spot of [illegible] last five months, however, the disease has been stationary. The affection is evidently confined to the parts supplied by lower portion of the [illegible] of the disease, the short sharp pains were almost constant, but at [illegible] in the back, just above the posterior superior spine of the ilium. Motor power in the limb is perfect, and "one leg," she says, "is quite as strong as the other." The skin in the diseased part is somewhat thickened, and slightly roughened from frequent shedding of cuticular epithelium. The nails are not in any way affected.

Has otherwise always been in apparently good health. Urine normal in sp. gr., composition, &c., menstrual functions healthy. The temperature of the part affected is 92° f, in all other parts of the same limb 93 f. In the left leg the temperature is 94° f, and in the hands and trunk rather over 97° f.

[illegible] boundaries could be determined with the point of a pen-knife. There is not the slightest history of anything like accident or injury, and [illegible]

[illegible] pheral? If centric, the loss of sensation should extend to the whole distribution of the nerve. If purely peripheral, how comes it that the portion of nerve below the affected part retains its function, for the internal saphenous nerve, as we all know, passes well on to the dorsum of the foot. Might not the retention of sensation in these [illegible] branches of which unite with those of the internal saphenous. Is the pain in the back in any way connected with the affection in the [illegible] simply consequent upon impairment of nerve force; or is it due to circulatory obstruction, the result of chronic arteritis? The circulation in the large vessels of the leg and foot is not in any way affected.

Professor Maclean of Netley, in a case that came under his observation, drew attention to the symmetrical nature of the disease:—Within the last two months my patient has noticed a whitish spot, in which sensation is fast disappearing, on the left leg, just above the internal malleolus, and, she says, that it was exactly in the same way the disease commenced in the right leg. This seems confirmatory of the learned Professor's observation.

The [illegible] suggestions as to the treatment [illegible] in this case.

CASE OF CHIONYPHE CARTERII.

By Honorary Assistant-Surgeon Minas.

[illegible], *Mangalore*.

This [illegible] in the Annual Returns by the Native [illegible] [illegible] and Hydrocele [illegible] was [illegible] in the Indian Medical Gazette [illegible]

[illegible] about the Madras [illegible] Dysentery. About [illegible] a small [illegible] [illegible] left foot [illegible] having [illegible] [illegible] a year after [illegible] [illegible] in the middle of the back, [illegible] These [illegible] [illegible] the [illegible] [illegible] which the patient described [illegible] [illegible] with a small [illegible] [illegible] glutæus.

Up to within the last year he has been able to walk about with the aid of a stick, but recently has been confined to his bed and the parts [illegible] [illegible] day and night.

The leg was amputated below the tuberosity of the tibia by a [illegible] [illegible] [illegible]

NOTE ON DRY EARTH DRESSING.

By SURGEON T. MATHEW, M.B., *Inspector*.

I HAVE lost 1 within the last week, the [illegible] shed in the last *Indian Medical Gazette*, extracted by the *Lancet* from the American journals of [illegible] the [illegible] sloughs by the direct application of dry earth. I tried it in a case of sloughing [illegible] after I had tried with the [illegible] acid formulæ, in arresting the sloughing or remedying the stench. I found that, on throwing a handful of earth, thoroughly pulverized and dried upon the sloughing surface, the foul smell ceased in a second; but, the moment the layer of dried earth became saturated with the discharge, the fœtor returned. This was only what was to be expected. I then tried a thick layer of dried earth lightly bandaged over the stump, and when the sun's returned had dried earth applied outside the bandage, but without succeeding in destroying the fœtor. The dry earth seemed to produce no effect upon the sloughing. Under these circumstances, I was glad to resort to the old charcoal poultice. Immediately on applying it, whether *post* or *propter*, the sloughing ceased, and healthy granulations appeared.

ANTISEPTIC TREATMENT OF NECROSIS.

By G. D. McREDDIE,

Civil Surgeon, Hardoi

A LAD about fourteen years of age, was admitted into the dispensary 9th November, 1868, suffering from necrosis of the right tibia: numerous sinuses led down to the bone, and the limb presented a most unnatural appearance from the combined presence in it of portions of nearly two shafts of tibiæ, the newly formed bone, and part of the dead one in course of absorption. The lad's general health was good, but walking was painful. The history given is that four years ago he sprained his ankle, and has ever since been suffering more or less acutely from the accident. Now in this case, nature was evidently effecting a cure by causing *partial* absorption of the dead bone; the only question seemed to be—whether the drain in the system, caused by the sinuses, would not be too much for the patient's constitution, and eventually destroy life; or at all events, the process of cure be so far prolonged as seriously and permanently to impair his health. If the sinuses could be got to close up, with average care, the limb might be safely left to itself, and the process of absorption go on to completion. Shortly before seeing this case, I had perused a most interesting publication by Professor Lister in the number for August 1st, 1868, of the *British Medical Journal*, giving a case of acute necrosis treated as the antiseptic system. With such a record before me, and the history of the case which was undergoing a natural process of cure, operative interference, by attempting removal of dead bone, was quite out of the question. I determined only to endeavour to close up the sinuses, and do nothing else. The oily solution of carbolic acid (one part of acid to four parts of oil) was used on a piece of [illegible] with the solution being placed in the limb, and moistened two or three times a day, the dressing was changed every third day. Subsequently the oil dressing was covered over with tin-foil, and as this procedure prevented evaporation of the acid, dressings were renewed only once a week. Under this treatment the sinuses all fairly closed, the skin completely cicatrized, and the patient was discharged on the 22nd February, 1869. The [illegible] much swollen, walking was painless, and he was stout in appearance. It was evident that the [illegible] bone was [illegible].

A CASE OF RUPTURE OF THE HEART.

ON the 5th April, the body of a man, aged about 45, was sent in for [illegible] examination. [illegible] The appearances observed were as follows:—Body apparently that of an able-bodied, healthy man, hair greyish, no marks of violence on the skin; but in cutting down on the sternum an ecchymosis, passing through cellular tissue, and [illegible] was seen over the 3rd [illegible] costal cartilages on the left side. On dividing the pericardium the sac was found full [illegible] blood. On examining a [illegible] with jagged edges, size [illegible] was discovered in the *left ventricle*: the heart was large and flabby, with an abundant deposit of fat on its walls, which were thus weak: extensive pleuritic adhesions on both sides, not, however, of very late date; lung-tissue compressed and congested; stomach empty, [illegible] state of maceration in it [illegible] down [illegible], being [illegible], over perhaps [illegible] but otherwise natural; intestines natural; valves of heart natural; [illegible] Brain not examined.

Nothing certain is known regarding the circumstances under which death took place. The [illegible] found dead on his [illegible] which he had been watering. It is [illegible] he was attacked by thieves; that a struggle ensued in which he was struck over the heart and spleen; that with his heart undergoing [illegible] the exertion so very much strained it in the [illegible] the direct violence inflicted on it, caused rupture of its wall and sudden death. Amongst solitary causes of death there were the [illegible] and it is quite [illegible] that the [illegible] circumstances [illegible] intermittent fever with its result, a softened spleen which was easily ruptured. These were *two* fatal accidents, but that affecting the more vital organ must be mainly taken into account in tracing the cause of death.

DEATH FROM SWALLOWING A MISWAK, OR TOOTH-STICK.

By DR. HUTCHINSON,

Civil Surgeon, Futtehpore.

MR. WATSON'S case in the current number of the *Indian Medical Gazette*, recalls to me an extraordinary case, which occurred to me while civil surgeon at Futtehpore, before the mutiny. An old woman came to me with most painful and urgent dyspnœa, exaggerated by a frequent cough. With great difficulty she unfolded her story, which struck me as marvellous and beyond belief. After cleaning her teeth, she was in the habit (like all natives), of passing the miswak far down, with the object of promoting reteching, and thereby clearing the fauces of the mucus accumulated during the night. While so engaged three days previously, the stick became impacted, and eluded her hold; frightened out of her wits, she had not the sense to withdraw it, nor would any one in the house assist her. Gradually the stick disappeared, and the present urgent symptoms as gradually set in. According to the old woman's description, it must have been nine inches long. What had become of it? It was preposterous to think that it had bodily entered the trachœa, but a fragment might have found its way thither, and occasioned the urgent and distressing symptoms present in the poor woman. It must, therefore, have slipped into the œsophagus, but, if so, why such distinct indications of bronchial mischief? The finger passed down into the pharynx could detect nothing, the pharyngeal forceps could grasp nothing, and an emetic, which acted freely, brought up no foreign body. I then opened the trachœa and passed a pair of dressing forceps carefully up and down, but could detect nothing.

In the course of the day, the poor woman died asphyxiated and unrelieved. A *post mortem* revealed the miswâk, nine inches long, lying quietly in the œsophagus, and resting on the lower margin of the stomach, where there was a patch of congestion, the size of an eight-anna bit, nothing else whatever. The lungs were stuffed with mucus, and presented the appearances to be expected in death from acute bronchitis.

In this curious case, I could only say that death was due to bronchial complications, induced by the presence of a foreign body in the œsophagus; but I never heard or read of a similar instance.

CASE OF LODGMENT OF FOREIGN BODY IN THE BLADDER—EXTRACTION BY PERINÆAL INCISION—RECOVERY.

By KENNETH McLEOD, A.M., M.D.,

Assistant Surgeon, 6th B. L. I.

NAZIR MAHMOOD SHEIK, aged 27, a resident of Hazrabatty in the Jessore District, came to the Jessore Charitable Dispensary, on the 29th of May, 1868, stating that he had got a piece of bamboo into his perinæum two months before, that it had lodged, and wishing to have it extracted. The man was placed in the position for lithotomy, and his perinæum was carefully inspected and examined. No fistula existed, and the only indication of previous injury was a small cicatrix about an inch to the right of the anal orifice. A careful exploration per anum was made without revealing anything unusual, and the man's story was discredited.

Further questioning drew attention to the bladder, and a sound was introduced which impinged on what appeared to be a stone, and seemed from the extent to which the instrument passed over its surface to be a large one. The sensation and ring were quite characteristic, and lithotomy was determined upon. On the 9th of June the patient's condition being favourable, the operation was performed. A semi-lunar incision was made in front of the anal orifice after the method proposed and practised by Sir William Fergusson. It terminated in a lateral incision of the prostate and neck of the bladder. The fore-finger of the left hand was now introduced, and, instead of a stone, a pointed body like a slate-pencil was discovered: its long axis was transverse to that of the bladder. Urine had been [illegible] the [illegible] stage [illegible] and the ends of the foreign body indented the empty bladder on each side.

To attempt extraction, while it was in this position, was madness. Owing to the primary incision being central, the finger could be carried well into the viscus. One end of the foreign body was pushed backwards, and the other gradually moved forward by getting the point of the fore-finger beneath and a little behind it. After [illegible] wound, and it was laid hold of by a pair of dressing forceps, and [illegible] Once [illegible] [illegible] [illegible]

had a purulent discharge from the urethra, a tertian fever, pain,

process of becoming the nucleus of a formidable calculus.

existence of the cicatrice, and the peculiarities of the fragment which

from the male urethra and bladder; very often from the female. I have myself extracted a full-sized knitting needle from the urethra of a lunatic by pushing at the deep end of it through the rectum.

through the whole thickness of the perinæum.

One practical lesson I would urge, namely, examine the bladder with a sound, when there is the least suspicion of any thing in it. I can

&c., which so frequently enter the limbs of natives, and sometimes

CASES OF HEAT APOPLEXY

moist, pulse quick but less full.

on the 19th.

Acknowledgements.

The Indian Medical Gazette.

Notices to Correspondents.

A "JUSTICE SEEKER" *should be rather gratified at having the opportunity given him of performing such good work, than excite attention by acts of remuneration.*

MR. RAM CHUNDER MITTER, *Sub-Assistant Surgeon of the Civil Station, Silchar, sends us an interesting account on the nature and treatment of* ——, *as they occur among the prisoners of the Silchar Jail. We need not say that we have not space to publish it. He states the successful Native tricks of the men themselves; that they even assume actual bodily disorders; and that the treatment that answers best is perfect rest, and opium. The introduction of some measure of preventive discipline would appear to be desirable.*

Sub-Assistant Surgeon CHEYTUN SHAW *at Peshawur, sends us a paper on the advantages of Burnett's aromatic tincture of intermittent fever, as he considers, hence being a very cheap medicine is very convenient, and is not so nasty or heating a medicine as quinine. Several Sub-Assistant Surgeons, from different parts of the Punjab, record favorable opinions to him of the good results of the treatment, and this encourages him to pursue his investigations. He remarks, "as far as I am aware, bonate has never been employed by European or Anglo-Indian practitioners, in the treatment of intermittent fever."*

Mr. —— *wrote to the Publishers of a case of cholera, cured, he says, by the patient returning to passionate treatment after having been led astray by other advice. Personal matters are introduced, which it would be usual always to avoid—detailing medical cases.*

Communications have been received from—

CIVIL ASSISTANT SURGEON, *Bhandjpore.*
Assistant Surgeon F. M. MACKENZIE, *Presidency General Hospital.*
W. CAMPBELL, ESQ., *Assistant Superintendent of Police, Midnapore.*
Surgeon G. K. POOLE, *18th Bengal Cavalry, Peshawur.*
DR. WALLER, *Calcutta.*
Assistant-Surgeon A. NEIL, *Civil Surgeon, Loodiana.*
INSPECTOR-GENERAL *of Hospitals (office), H. M.'s Brigade Forces, Simla.*
DR. MATHEWS, *Civil Surgeon, Dinapore.*
DR. FRANCIS, *Deputy Inspector-General of Hospitals.*
DR. RATTON, *Civil Surgeon, Nursingpore.*
AN ENQUIRING SUB-ASSISTANT SURGEON.
Surgeon W. J. MOORE, *Rajpootana Agency.*
DR. MUNRO, C.B., *Deputy Inspector-General of Hospitals.*

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The Publishers beg to notify to subscribers, that the size of the *Indian Medical Gazette* has been increased by 4 pages of additional matter from this number, as a permanent arrangement.

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See page 3 of Advertisement Sheet.

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WYMAN & CO.

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Technical expressions ought to be so distinct that no possible mistake can be made in reading them.

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Communications should be forwarded as early in the month as possible, as delay must inevitably occur in their publication.

Business letters to be forwarded to the Publishers, Messrs. Wyman & Co.; and all professional communications to the Editor, direct.

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TREATMENT FOR HEAT APOPLEXY.

WE would direct the attention of our readers to a new treatment for heat apoplexy—or apoplexy as all cases are called now—he ought to notice in this number by Dr. Waller. He has employed the remedy for many years; its success is remarkable, and it is well worthy of being generally tried.

Through the kindness of the Deputy Inspector-General of Hospitals, British service, at the Presidency, we are enabled to give the details of five cases: three recovered in which quinine was used, two died, in which it was not used.

If any officer should be induced to give the remedy a trial, it is hoped they will communicate the results to this journal.

NOTES FROM A SURGEON-MAJOR ON FURLOUGH.

THE stimulant and non-stimulant modes of treatment in disease are occupying greatly the thinking minds in Edinburgh. All seem agreed as to the necessity of supporting the system during the exhausting stages of fever, and ascribe a diminished mortality to the "high-fed fevers" of the great Dublin physician.

There is, however, a growing conviction that stimulation proves hurtful during the early days of an attack of fever, and that in some chronic diseases of the digestive system, and in phthisis you may cause a great deal of uneasiness, and accelerate a fatal result, by drenching the system with alcoholic liquors, and over-loading the blood with the rich products of butcher-meat.

White meat, with puddings and milk diet, abundantly supplied as the patient can bear it, have proved peculiarly fitted for those severer cases of diarrhœa that return from India in an exhausted state. Some cases were related to me, where serious and fatal illness followed attempts to restore the constitution rapidly by frequent and full diets of butcher-meat. This is no news to us in India where the value of a milk diet is so well understood; but I write it to show the direction which professional thought takes at present in Scotland.

I have been frequently asked if the treatment of dysentery by ipecacuanha in large doses is really of such undoubted value as is represented. It is difficult to give an unqualified answer, as the questioner's mind may have received a too favourable impression, but I have not hesitated to express in the strongest terms, the inestimable good that follows large doses in acute attacks of a bad form, besides being very valuable in some other forms of the disease. The good effects of ten grain doses in injection seems less understood, though we know, in cases of great irritability of the stomach, how valuable it is. Children, too, get great relief, as you know, in dysentery, from this mode of exhibiting smaller doses.

follow the guilt of youth into a ruined manhood and old age—not

empire.

Angus, a venerated member of our services, in speaking of this the other day, told me that he remembered Twining being accused of declaring that every one in India had something the matter with

ANEURISM IN THE ARMY.

In the May number we drew attention to Mr Maclean's observations regarding the frequency of aortic aneurism in the army, published in the *Lancet* of 20th February, and in doing so, we reproduced some statistical data derived from Dr. Bryden's tables, exhibiting the prevalence of heart disease and aneurism, among British troops, serving in

deaths from aneurism in the Foot Guards and Line Regiments at

against the two former bodies of men is very striking—

	Ratio of deaths per 1,000 of strength in Brigade of Guards.	Ratio of deaths per 1,000 of strength in Line Regiments.	Ratio of deaths per 1,000 of strength in Royal Navy.
1862 ..	·28	·32	·11
1863 ..	·47	·30	·09
1864 ..	·37	·34	·18
1865 ..	·25	·40	·09

more commonly fatal in the army than in the civil population. What

of recruits for the army than for the navy. We take it that the same vigilant supervision has been guarding the portals of admission

ment of bad lives in the army and navy.

vision in the recruiting districts: if it must be granted that the value of the lives of both services are tolerably equal on enlistment, it follows that it must be due to causes in some way or other connected with the calling of the soldier. In thinking over this question, it has occurred

aneurism of the thoracic aorta must become unfit for his work, which imposes an extraordinary taxation upon the respiratory and

man had gained admission to the navy with an incipient aneurism active employment without his aneurism undergoing rapid develop-

firmed, invaliding would be the natural consequence. No physician would countenance the idea of permitting a sailor so affected to undertake active work. On the other hand, one can understand how such

inevitably place the sailor among the candidates for discharge, or invaliding. Whilst, therefore, the sailor's death from aneurism in this returns of the civil population, that of the soldier would probably be

have remained long enough in the ranks to have allowed the aneurism to reach its advanced stages prior to detection, or at all events to any arrangement having been proposed for his being invalided.

There can be no doubt but that the sailor is constantly exposed to much more strain upon his organs of circulation than the soldier. This is the natural result of his occupation. We also know from the labours of Chevers and others, that the progress of any given case of aneurism of the aorta to a fatal termination, is, *ceteris paribus*, in the direct ratio of taxation inflicted by the occupation, or exertion. For, whilst a man leading a quiet, sedentary life, provided with every comfort and luxury, with nothing to augment the ordinary power exerted by the left ventricle, may live some years in the enjoyment of moderate health with aneurism of the thoracic aorta, a person, in the position of a sailor, who is not over-burthened with luxury or ease, and who is repeatedly compelled to bring his extraordinary muscles of respira-

lungs from the right ventricle as rapidly as it is sent thither, conditions which imply corresponding activity in the left ventricle and arterial system generally, may, and often does perish, in a few months, either directly from the sudden giving way of the aneurismal sac, or indirectly from complications in neighbouring and important organs. The only hope for the prolongation of life, in the latter instance, is early invaliding. It is, therefore, we submit, possible that a portion of the difference in the mortality from thoracic aneurism in the army and navy may be attributable to earlier invaliding of the subjects of this disease in the latter service. But we are far from believing that this explains the whole discrepancy.

Aitken, at page 730, vol. II, fourth edition of his work on *Practice* [illegible] though recognising the influence of gout and rheumatism in the causation of aneurism, declares that out of 26 *post mortems* of soldiers in each of which a distinct history of syphilis was present, associated with unmistakable syphilitic lesions, "17

* [illegible] Dr. Keogh's [illegible] Medical Officer [illegible] Appendix [illegible] [illegible] *I. M. G.*

changes—changes which are uncommon at an early period of life, and which I have every reason to belive are due to syphilis. The changes are obvious from cicatrical-like loss of substance of the under coats.: small local dilatation of the artery, and in several cases aneurismal expansions, one as large as an orange which proved fatal." It is highly probable that the influence of syphilis in the production of aneurism has been greatly over estimated by Aitken and others. In no class of persons is syphilis so common as in prostitutes, and yet, as Myers observes, aneurism is almost unknown among them. Moreover, syphilis is about equally prevalent in the army and navy, though there is a marked difference in the prevalence of aneurism. Though, therefore, it may be granted that syphilis, like any other constitutional poison acting upon, and leading to degeneration of the blood and certain structures, may exercise its share in the causation of aneurism, there is no good ground for believing that it is more effective or potent in the army than in the navy.

Mr. Myers considers that the "mechanical obstruction to the circulation is the chief cause of the excess of aneurism in the army." He expressly states that this obstruction is directly produced by the tunic which encases the soldiers' chest and neck so tightly as to interfere materially with respiration and circulation. By some experiments made with the spirometer, he found that recruits "standing at 'attention' with their tunics buttoned up, without their arms and accoutrements, suffer a loss of about twenty cubic inches on forcible expiration." The diminution of air expired may be regarded as a measure of the interference with the inspiratory act. The beginning of the evil is the impossibility of expanding the thorax sufficiently for the admission of the requisite quantity of atmospheric air. Not all the power of the ordinary and extraordinary muscles of inspiration can overcome the resistance of the regulation tunic, tightly fastened and fitted to the body by the ingenuity of the tailor, during tranquil respiration and circulation, without special reference to anything except extreme neatness. These muscles have been most beautifully contrived by the Creator to expand the chest, rythmically, in every direction, to the necessary extent under ordinary and extraordinary circumstances; but they were never designed or intended to oppose successfully the resistance presented by a well-fitted and neatly-made regulation tunic.

If a sufficient quantity of oxygenated air does not penetrate the pulmonary cells, at each inspiration, a serious impediment is at once interposed to the free circulation of the blood through the lungs. For a diminution in the respiratory changes implies imperfect arterialization of blood in the lungs: and deficient arterialization signifies proportionate interruption to the transit of the circulatory fluid from the right to the left side of the heart. In extreme cases, in the asphyxia consequent on drowning, or immersion in carbonic acid, we see these effects produced to the fullest extent possible; so that the united forces of the right and left ventricles, aided by all the auxiliary powers of circulation, are totally unable to overcome the resistance opposed to the onward flow of the blood by the cessation of the pulmonary respiration.

The *first* effect of a too tightly fitting tunic is to interfere with the due aëration or oxydation of the blood. The *second* effect is to derange the normal harmony and equilibrium subsisting between the respiratory and circulatory systems. The *third* result is to disturb the balance of the circulation itself. There is, in all human probability, no part of the circulation which is not more or less affected by this state of things. So long as degeneration, or disease has not done its work in any of the vessels, these are capable of meeting and overcoming great emergencies. Nature constructed the arteries, like the lungs and heart, to perform, with a certain amount of impunity, extraordinary as well as ordinary functions. How admirably she has succeeded in her design is illustrated by the health enjoyed by men who undertake great exertion, or by the impunity which most men can, by running, double the work thrown upon the circulatory organs. In no case do we see the law more beautifully demonstrated than in the sailor on active duty. When, however, any impairment, in structure or elasticity happens, then the evil effects of overtaxing the circulation become patent.

It is, we think, in every way probable, that an overwhelming majority of thoracic aneurisms are caused by pre-existing atheromatous, or other degeneration of portions of the inner coat and elastic structure of the vessel. How the abnormal life of the soldier is calculated to favour such a condition of the arteries has been proved by the *post mortem* revelations of Aitken and other authorities. With an atheromatous aorta, there is no difficulty in understanding the injurious effect, which must take place, from frequently repeated and continued interference with the process of respiration, on every occasion, the soldier puts on his tunic for passive or active duty. In addition to a deficient oxygenization and arterialization of the blood in barracks, must be reckoned the limiting action of the tunic by means of which the respiration is impeded, and an obstacle to circulation established in such vitally important organs as the lungs.

Herein lies the great distinction between the soldier and sailor, in reference to the subject of aneurism of the thoracic aorta. The soldier, both on and off duty, is placed under circumstances which interfere with respiration. The sailor, perhaps, may be subject to close and badly ventilated sleeping accommodation, but during the day, and hours of duty, he breathes the purest air of heaven, and is never exposed to restriction in the action of the muscles of respiration. The artificial, and, doubtless, unintentional interference with the respiration and circulation of the soldier is unknown to the sailor. In addition the sailor enjoys an amount of fresh and unadulterated air for purposes of respiration, to which the soldier is at all times a foreigner, excepting when he is voyaging between one colony and another: he is consequently less liable to degeneration of the inner arterial tunics, and to aneurismal disease. But, when he does contract a degenerating condition of the inner coats of the aorta, the very nature of his occupation must lead to a rapid development of aneurismal dilatation and to early incompetency for duty.

Now, what is the true pathological signification of atheromatous or fatty degeneration of the inner coats of the thoracic aorta in the soldier encased in a tunic which embarrasses healthy respiration? In other words; given an aorta, portions of which have lost their elasticity and contractility from fatty or atheromatous disease in the inner coat encroaching upon the circular or elastic coat, and a more or less perpetuated disturbance in the balance of the circulation, such as to call for more than the ordinary exertion of force by that vessel, what will be the probale order of events? The answer is not difficult. In a healthy state, the elastic power of the aorta, after the completion of each systole, is competent to restore the natural calibre of the vessel before the semi-lunar valves are re-opened by the next systolic contraction of the ventricle. To do this effectually, the elastic tissue must be in a state of absolute integrity. When, however, portions are atheromatous or fatty, these are deprived of their elasticity. During the recoil, subsequent to the systole, these diseased parts fail to re-assume their original position. As time rolls on, dilatation and attenuation preponderate over the elastic power of the vessel. *Here* is a condition favouring the formation of an aneurism. If a man, under such circumstances, be moving in the higher circles of society, with no imperative demands upon him, for the exercise of violent muscular exertion, nothing more serious than moderate dilatation of the aorta may ever result

Doubtless, "the manner in which the tunic is fitted round the neck" is also embarrassing. The collar is fitted too tightly. It must exercise unfair compression on all the soft structures in front of the cervical region of the spinal column. As the collar is generally fitted when every nerve, muscle, artery and vein, and capillary is distended with juices, that it must then be a great deal too tight. The compression thus produced interferes with the return of venous blood from neck, face, and brain. It must also partially contract the calibre of the carotids. Thus, by causing congestion of the brain, and by [illegible] supply it must produce "the faintness in the ranks after a little exertion."

It will have been gathered from the foregoing observations that all the grave evils which result from the employment of a too tightly fitting tunic are avoidable by the simple alternative of having it made so loose as to allow the freest play to all the muscles of respiration, and an uninterrupted supply of blood to, and return of blood from the face, neck, and brain. With reference to the knapsack it may be said, that that which interferes least with the [illegible] must also be most useful and least [illegible] of aneurismal disease of the thoracic aorta.

MEDICAL MISSIONARIES IN INDIA.

(Continued from p. 82.)

THE Moravians began the Danish [illegible] but not the French physician, [illegible] part of the world may be, wherever the preaching of the Gospel and the practice of European medicine are attempted in barbarous and exclusive lands. In no country has this truth been more strikingly illustrated than in China from the year 1807, when "Protestant Christian philanthropy first broke ground there," under the auspices of Dr Morrison, an agent of the London Missionary Society, to the present time, when Dr Dudgeon, the [illegible] agent of the same society, is meeting with the tacit approval of the authorities, who consider that the good will in the end to the body counterbalance the evils of the proselytizing.

It is [illegible] Dr Harvey has in the last number of the [illegible] well pointed out the practical necessity which existed that our Saviour, when he came into the world as a teacher of religion, should at the same time assume the character of a healer of [illegible] and the same necessity exists still [illegible] forth to preach his master's doctrine to nations steeped in ignorance and cruelty. It was abundantly recognised by Dr. Morrison when he set himself, with the assistance of Dr. Livingston, a surgeon [illegible] to the old East India Company, to endeavour to evangelise the Chinese people, through the medium of the healing art. With the same object Dr. Colledge established his eye infirmary at Macao in 1827, and treated, in 10 years, 4,000 patients. Stimulated by such successful examples, America, in 1835, despatched the Revd. Dr. Peter Parker to labor in the same soil; and through his instrumentality, the "Medical Missionary Society" in China was established. Ever foremost in good works, the new world has since, at various times, through the agency of several societies, the American Presbyterian Board, the Baptist Board of Foreign Missions, the Southern Baptist Conversion, the Missionary Society of the Methodist Episcopal Society, and the Board of Foreign Missions of the Protestant Episcopal Church, launched forth her medical missionaries into the barbarous land. The bread, thus cast upon the waters, will surely be found after many days.

Whilst some medical missionaries were thus being sent to China at the expense of Societies and Boards, others went at their own. In 1834, Lockhart and Benjamin Hobson, M. B., Agents of the earnest London Missionary Society, appear upon the scene. Then we have Drs. Cumming, McGowan, Devan, Ball, Happer, Burton, and Hepburn, all at work in the one favored land. So successful were the results of these several laborers in their Lord's vineyard that, in 1846, Dr. John Wilson, Inspector of Naval Hospitals in China, could not refrain from recording his high sense of the value of the medical mission work which was slowly but surely producing its intended effects upon the Chinese minds, and he paid a high compliment to the professional, as well as to the missionary zeal of the laborers; thus bearing testimony to what may ever be observed of the medical missionary wherever he may be, namely, the high view which he takes of his profession, studying it as a science as well as a mere art, taking a pride in the condition of his Hospital or dispensary, the welfare of his subordinates, and in every way, bringing credit upon the noble calling which he has espoused. And now Scotland begins to show her interest in what Professor Simpson characterised as the "mighty and magnificent mission," an interest which has never flagged, nay which has rather become [illegible] with time and which is now becoming extended to other countries.

This first notable expression of this interest was contained in an oration delivered at a meeting of the College of Physicians of London in December, 1834, on some of the results of the successful practice of physic," by Sir Henry Halford, then president of the college. After pointing out to his audience, that "he did not wish by these to mean pecuniary results, but the moral influence, which the cure of the ills of the body has upon the minds of patients, the deference to the physicians judgment on other subjects—and that gratitude and attachment which is the sweetest reward of our anxious and laborious life." He dwelt upon the necessity of the missionary, after having gone through his theological course, attending to anatomy, and chemistry, and other courses of medical lectures; and for a certain time [illegible] some one of the great hospitals, so as to qualify himself to practise physic and surgery as it, *(note this) he were to prescribe our professions his manner of living.* This last was important advice, as there is a great tendency to believe that a *smattering* of medical knowledge, added to the religious, is sufficient for the missionary. After Sir H. Halford's lecture, medical missions received an impetus at home. Articles on the subject were published in the Scottish Christian Herald. Dr. Parker left Canton and went to London, Edinburgh, Glasgow, Liverpool, and other large cities. His reception was most cordial. The subject was warmly taken up. The

Royal College of Surgeons of England resolved to educate, at their own charge, such Chinese youths as might be sent home for medical education. Three scholarships were founded in Kings College, London, for the education of medical missionaries. Edinburgh formed a committee of her sons "to co-operate with the Medical Missionary Society in China." And public meetings were held in New York, Washington, Philadelphia, and Boston. Those were the halcyon days of medical missions in India. But soon, alas! differences of opinion arose between the American and British medical missionaries, the end of which was that no help was forthcoming to the latter from the society in China. Then Dr. Parker appears to have—not altogether, perhaps, left his first love, but to have admitted the world to a share in his affections. He became first Chargé d' Affaires, and then Chief Commissioner for the United States Government with China! The conjunction was peculiar, and we venture to say to be regretted.

And now comes an important epoch in the history of medical missions. The Edinburgh Committee, which had been hitherto intimately and exclusively associated in the Medical Missionary Society in China, now enlarged its sphere of operations, and became the "Edinburgh Association for sending medical aid to foreign countries." The society in China, and "Syrian Medical Aid Association" of London (whose cause had been advocated by Sir Culling Eardley), were to be the first to receive pecuniary help; but the great objects of the association were, "to circulate information on the subject of medical missions; to aid other institutions engaged in the same work; and to render assistance, at missionary stations, to as many professional agents as the funds placed at its disposal will admit of;" and these, we believe, are its objects still. Dr. Abercrombie—honored name amongst those which are renowned for benevolence and religious deeds, was the first president, and promoted, we may be sure—to the extent of his ability—the noble work of the association.

The first operations of the society in *India* occurred in 1853, when Dr. John Owen Evans, a graduate of the University of London, in connection with the missionaries of the London Missionary Society, set foot in Mirzapore, and there commenced within our own recollection, his glorious mission. The Hon'ble Mr. Thomason was, happily, Lieutenant-Governor at the time, and he—if we remember right—withdrew the Government sub-assistant surgeon from the Government dispensary, in which Dr. Evans was allowed to practise. The field was a wide one. There, in one of the greatest commercial towns in India, had the enthusiastic medical missionary full opportunity, unfettered by any restrictions, for finding his way to the hearts of the large Hindoo community who came to him gladly. As before urged, an inferiorly educated physician will not answer. But, alas! where are men like Dr. Evans to be found when sought for? He, poor man, soon lost his health, and was compelled to return home to recruit it. The work of medical missions in India then received a check which still exists. Medical missionaries should be men of a high stamp in every way: and such men are not easily found. Work, however, is being done in India on a limited scale, to which we shall advert hereafter.

THE NEW NOMENCLATURE OF DISEASES.

IN our number of the 1st March, we briefly referred to the introduction of this new system. In the British army, the classification has been in use since the 1st January, and it is now adopted in all returns by the military medical officers of the Indian. It has not yet been introduced for the civil branches of the service.

The great art and science of this nomenclature is its simplicity and uniformity. The index of the book is a dictionary, in which every disease is to be found, and referred to its proper position; from its copiousness, including all varieties of disease and injury each complaint, &c., is appropriately distinguished; one name as recorded must signify that disease, and can be mistaken for no other.

The possibility of error is thus reduced to a minimum, and this is the great object of classification; it is the introduction we would fain hope, to the world, of a registration of truthful diseases, which eventually must throw light on their causes, and tend greatly to discover how they are to be prevented. By the amplitude of the vocabulary, "other diseases," that bane of former medical returns, will be avoided, and mistakes in recording diseases can hardly occur, except in such minds who would not return a case of ague under intermittent fever.

The looseness of the former nomenclature had often been regretted, and led to grave mistakes and inconvenience in the mercantile and political world. Take the instance of Spain last year, who, because the Registrar-General's return reported cases of "cholera" in London, imposed ten days quarantine on every vessel arriving from the Thames at a Spanish port; this was obliged to be submitted to until it was pointed out that the word merely intended English or bilious cholera, choleraic diarrhœa, or cholera infantum, &c., but not the epidemic form of the disease.

A later example, however, and one which concerns us more nearly, occurred in April last, when the passengers by the P. and O. Steamer *Behar* found themselves liable to ten days' detention at Suez, because the Health Officer of Bombay had reported "cholera" was present in that town. This was not the first difficulty either that had occurred in the Red Sea ports from the wording of the health certificate. The matter was settled at Suez by the authorities deciding, that as the word "cholera" in the certificate meant merely its "sporadic" form, quarantine need not be enforced, as the presence of that disease did not affect the public health.

In all these cases the difficulty has arisen from the incompleteness or insufficiency of the former classification of disease.

Now, when the Indian health returns are organised on the new nomenclature, such misapprehensions can rarely arise. Two names for cholera are given: 1st, simple; 2nd, malignant; the first is never absent, more or less, from the seaport towns of India, and, as affecting the public health, is known to be comparatively harmless; the presence of the second would always indicate that quarantine must be enforced.

The system although, in reality, so simple, has to be studied: there are several diseases, for instance, which at first sight would appear to be omitted from their not appearing in the index. Cephalagia, accumulation of wax, epulis, &c.; but they are all to be found under the headings, neuralgia, diseases of the ear, gums, &c., and several more could be named of the same character: then, again, cbriositas is really omitted, and would have to be recorded under febricula perhaps, as it could not be noted under alcoholic poison or delirium tremens; vesiculæ pedis also does not find a place, and yet has frequently to be noted in military returns: many other cases will, doubtless, occur in practice, but all of so slight a nature as hardly to deserve notice, except that often, practically, it is these little things that cause the most trouble.

TEMPERATURE OF THE BODY IN HEALTH AND DISEASE.

WE would draw the attention of the Profession to the admirable lecture of Dr. B. W. Richardson, on the "Increment of Animal Heat in the *Medical Times* of 8th May.

Observations on the heat of the body in health have never yet been made in India; to any officer who has leisure and opportunity, every barrack room thus offers a wide field for the practical study of the question of how much the normal heat of man (or animals) is re-

[illegible] the [illegible] country. Such [illegible] [illegible] at different times of the day on a great number of [illegible]

On the 22nd Dr W Palmer of the General Hospital wrote:—

"My observations on the maximum temperature of patients who had been under the influence of quinine during the whole of the cold season [illegible] I found that there was an increase of the temperature of the body, corresponding to increased temperature of the air; a fact which has been established over and over again in connection with the ordinary temperature of healthy men."

"In almost all depressing diseases the temperature of the body [illegible] retains its height until evening, and then falls till the next morning. If the same or similar changes take place in healthy bodies, it will give us a clue to periodic changes and diseases which is yet missing."

The following few sentences from Dr. Richardson's lecture would show the direction such investigations should take: attention should [illegible] the method of determining the phenomena:—

"We not only want to know the fact that in such and such a [illegible] there will be [illegible] but we want to be profoundly acquainted with the meaning of the whole subject. We want to know whether the rise or the fall of temperature, from the natural standard, is a cause of the other attendant phenomena, a coincidence or a sequence. We want to learn, above all things, what variations from the natural thermal standard, above and below it the animal body will sustain, what symptoms will run with each variation; what extremes of temperature will impede or stop the animal mechanism."

"It is a common idea that all warm-blooded animals possess and maintain a given standard of animal heat under different conditions. This is an error which repeated experiments soon puts right. Thus I find in pigeons kept with every care, well fed, well protected, there are variations of temperature ranging from 106° to 109°. This range of full three degrees extends to all other animals of warm blood which I have studied, and we may, I think, [illegible] as a fact that in animal bodies there is an allowance made for fluctuations of temperature, an allowance for expansion and contraction, if we like to express the matter so, of three degrees on Fahrenheit's scale."

"In considering the temperature of the animal body in different individuals of the same species, age must be carefully taken into account. I believe it will be found, in the course of further experimental inquiry, that each period of life is marked by a distinct thermal range, and that what would be a natural thermal reading at one period of life would be unnatural at another."

"In the human subject a sufficient number of observations have not been conducted to enable one to speak with precision on the ranges of temperature according to age; but the general fact that there is a variation, and that there is persistent decrease in the advanced period of life, is proved."

"The condition of the body in respect to fatness or leanness is another modifying influence to be remembered in estimating animal temperature. As a rule, a body in good condition has a higher standard of temperature than a body which is badly nourished, or than a body which is unduly loaded with fat; and one very important observation deserves to be made in relation to the presence of fat in young and active bodies. The observation is this—that whenever in such a subject there is, within the organism, a cause at work leading to an undue accumulation of heat, there is, owing to the imperfect conductive power of the subcutaneous layer of fat, a more rapid increment of heat."

"Let me urge the importance of watching the influence of season on the three normal readings of the animal body. In every state of health there will be always a slight increase of temperature of the body during the heat of the summer, and a decrease of mean temperature during the cold of winter. It is true that [illegible] does much to equalize, that the [illegible] of the skin and lungs in the hot, and the slow action of the same organs in the cold months, specially tends to equalization. But a difference ranging from 1° to 2° F. must still be allowed, and it must be borne in mind that an extreme increase of animal temperature in the cold months is a much more serious matter than the same increase in hot months of the year. Further, there are some months which are specially critical in these respects; there are months when animal waste is enormous; there are months when animal increase is enormous."

THE ROYAL SANITARY COMMISSION

A Royal Warrant [illegible] has been issued by Her Majesty [illegible] the Commission appointed last November, for inquiring into the operation of the sanitary laws, and appointing a new one with fresh powers.

The new Commissioners are directed to inquire into the operation of the sanitary laws, so far as they apply to sewerage, drainage, water-supply, removal of refuse, control of buildings, prevention of over-crowding, and other means of promoting the public health: and further to report upon the operation of the laws for preventing the introduction and spreading of all infectious diseases, and other kindred subjects.

The Commission will probably specially consider it its duty to inquire into the propriety of extended legislation to prevent the spreading of euthetic disease.—*British Medical Journal.*

INDIGENOUS FOODS.

Dr. Moore, the Superintendent of the Raj Dispensaries in Rajpootana, notes the following aliments in use among the inhabitants of that country during the late season of scarcity (1868):—

"Atta being scarce and expensive, I found the inhabitants of Rajpootana use the following materials, ground up and mixed with various proportions of flour:—The roots of a peculiar coarse grass called *Nagoo Moth*, found growing near tanks, jheels, and wells. Of this there are two varieties, one sweet and soft, consumed by the people; the other hard and pungent, and given to cattle.

2ndly. The long roots of a rush, or cyperus, also found in the beds of tanks. This contains a large mass of pithy substance, looking like course arrowroot.

3rdly. The kernels of the wild plum, where it grows, as for instance in Sawaiy.

4thly. The inner bark of the tamarind and neem trees. The two latter substances are not used except as a last resort.

5thly. Where produced the kurree or linseed cake, formed of the seeds after removal of the oil.

Thus the country supplies a larger amount of aliment than could have been supposed."

THE JAILS, AND JAIL SYSTEM OF INDIA.

(Continued from Vol. IV., page 103.)

7. *Finance.*—"The gross annual cost of persons and prison establishments, exclusive of building charges incurred in the Public Works Department, amounted in 1867 to Rs. 47,08,091."

The following table shows the expenditure [illegible] in the several [illegible]:—

YEAR 1867.	Total annual expenditure.	Net receipts from prison manufacture.	Total net cost to Government per prisoner.
	Rupees.	Rupees.	Rs. A. P.
Bengal ...	13,14,243	4,41,238	53 4 8
Bombay (1867-68) ...	5,90,079	2,17,930	63 14 9
Madras (1867-68) ...	8,82,362	7,618	89 0 0
N. W. Provinces ...	7,35,770	4,35,072	45 12 0
Punjab ...	5,44,595	71,815	47 5 2
Oude ...	2,47,921	18,323	35 4 0
Central Provinces ...	2,44,572	53,650	51 12 0
Hritish Burmah (1867-68)	2,54,571	53,916	56 15 9
Byderabad ...	75,806	2,811	83 0 8
Mysore ...	2,37,918	16,325	78 12 4

"The next table shows the average charge per head in each province in 1867, under the chief item of jail expenditure.

YEAR 1867.	Establishments.	Diet.	Clothing.	Medicine and Hospital charges.	Contingencies.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Bengal ...	22 0 0	32 6 8	4 11 7	0 12 8	3 2 8
Bombay ...	43 0 1	41 14 1	5 12 8	2 4 9	7 1 3
Madras (1866-67)...	27 4 0	50 9 9	4 3 2	0 6 11	6 12 6
N. W. Provinces...	19 0 6	17 5 5	2 14 2	0 8 2	3 14 7
Punjab ...	21 3 10	22 8 9	3 13 6	1 4 1	2 3 7
Oude ...	19 7 2	13 7 0	1 14 6	0 10 0	2 10 0
Central Provinces	26 11 8	23 14 1	5 8 2	3 15 0	3 5 4
British Burmah ...	34 15 0	30 4 2	2 12 7	0 1 5	3 9 11
Mysore ...	29 11 7	42 1 5	4 10 1	0 15 4	7 2 10

"This statement shows very large and curious discrepancies. It is not clear why the cost per prisoner, on account of establishment, should in Bombay be nearly double that of almost every province in India. Why a prisoner can be fed in Oude for Rs. 13-7, whereas, in some other provinces, the same charge amounts to Rs. 30-4, 32-6, 41-14, and 50-9 for the year? Why the charge for clothing in the Central Provinces should so far exceed that in Oude, the Punjab, or the N. W. Provinces? Why in the Central Provinces again, the charge for medicines and hospital charges should be more than seven times that of the North-West? or why in Bombay and Mysore, contingencies so far exceed the same item elsewhere?"

"If the remunerative theory be discarded upon the more important ground of real efficiency in prison discipline, it is obvious that to counteract the growing and rapid tendency of all charges to increase, the Government must look to the minute and careful supervision which may be expected from the recently sanctioned arrangements for placing the district jails in all provinces under special officers."

"It will be for future reports to show how far this last measure effected the two great objects for which it was sanctioned: firstly, the improvement in prison discipline as tested by a decrease in committals, not for any one year, but for a series; and secondly, an immediate reduction in those charges which a comparison with other similar provinces shows to be excessive."

8. *Reformatories (for juvenile offenders).*—In 1862, the Government of Bombay submitted a plan to the Government of India for the establishment of these institutions; referred back to Bombay, an amended bill was re-submitted the following year. On the first occasion it was disallowed, "its provisions being inconsistent with the Penal Code," and on the second, it was disallowed by Sir Wm Denison "on the general ground that reformatory institutions in India stand altogether on a different basis from that of England," and from his experience in Madras he doubted their necessity.

"India," says the note, "is not yet sufficiently civilized, even where it has come most under European influence, to breed up the large vagrant population, the offspring and heirs of poverty and crime, that under some such name as street Arabs infest most of the large cities of Europe."

In Ireland in 1866, out of a population of six millions, there were 1,060 juveniles (under 16 years of age) committed to prison, while in the same year, in the whole of British India, with a population of over 150 millions, but 2,000 committals of the same age took place.

The Government of Bombay re-opened the question again in 1865, and similar applications have from time to time been submitted from Oude, the Punjab, Mysore, the North-West, and Central Provinces; but "in each case the Government of India has replied that reformatory institutions on the English model are not adapted to this country: all that is necessary being the strict separation of regularly convicted juveniles from adults.

"The question was urged by Miss Carpenter in 1866, and a circular, explaining the views of the Government of India, was issued in 1867. The Government of Madras, in January 1868, protested against the views," but their application was negatived.

The arguments on which the Government of India has based so many negative replies to proposals coming from all the different administrations, are given at full length in the note, and need not be reproduced here, the main heads having been noticed.

The Committee of 1864 entertained "great hopes that the provisions of the Whipping Act will prove of eminent service in thinning the juvenile population of our jails," and they were unanimous in recommending "that in every jail means should be provided for separating juvenile offenders from adults, and that it is moreover highly desirable, wherever such an arrangement is practicable, that separate sleeping accommodation should be provided for every juvenile prison inmate."

Therefore, "it should not be supposed, because the Government of India has withheld its sanction to the establishment of reformatory institutions on the English model, that no practical steps have been taken towards the reformation and instruction of juveniles regularly sentenced to imprisonment;" and accordingly, we find that under all the administrations the prison regulations for juveniles conform to the above practical rule for guidance; and as jails are multiplied, and some accommodation given for separation and instruction, the above principles will be carried out. On the whole, then (says the note), "it would seem that in all the provinces such measures as are suited to the circumstances of the country for the treatment of juvenile offenders have been sanctioned, and in most provinces are in operation."

(To be continued.)

Local Correspondence.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

SIR,—Although your journal is medical, it is widely circulated amongst men who, having received a scientific education, would be able to contribute much valuable information on Indian questions of scientific interest, which are at present by no means well understood, and which are only likely to be elucidated by numerous simultaneous observations in different parts of the country. Isolated observations of great value are often made, and as frequently forgotten for want, either of knowledge of what other have done, or [illegible] stimulus to make an effort in the enquiry, and make the observation appear worthy of record.

If several of yours readers, in different parts of India, would make

I am Sir &c.

W. J. PALMER.

Official Selections.

EXTRACTS FROM THE RECORDS OF THE BENGAL MEDICAL DEPARTMENT.

(Continued from page 251.)

1768 —Reorganization of the Hospital Board [illegible] to have taken place on the 24th June). The Board were directed to pay the whole of clerks at [illegible] other than writers according as they [illegible] but limiting [illegible] to 9 p.m. and should the office be called upon to work over extra hours, it would be no claim for extra [illegible] Two Head writers were to draw Rs. 50 a month each, the "standard of limitation for writers of this description," and the limit of office house rent was Rs. 250 per mensem.

[illegible] the Board, 4th July) in connection with the Adjutant General, to prepare a list of Assistant Surgeons, [illegible] to be inserted in General Orders, and their rank permanently fixed." The list is published, and they number 86.

(This would appear to be the first official list, and probably will stop the endless references about rank which certainly hitherto [illegible] of the Board's correspondence. The records are now not concisely kept, duplicates and even triplicates [illegible] and many letters on trivial subjects which need not have been copied in full.)

The Head Surgeon at Berhampore reporting (12th July) on an excess of expenditure of wine in his district beyond the authorized allowance, states—"since the arrival of the 3rd European Regiment the number in the Hospital is remarkably increased, the average of the month being 191: amongst these many desperate cases occurred, which rendered the prescription absolutely necessary in low fevers, fluxes, and the most obstinate venereal, requiring a restorative and strengthened regimen, which happily effected the recovery of many who were sinking under these disorders."

The Head Surgeon then points out the causes for so much disease to be drink and venereal, "that if any means could be adopted for the prevention, in a situation of itself healthy, or might tend to remove these unfavorable impressions that naturally [illegible] from seeing a thin parade, and an heavy hospital [illegible]

Two European battalions apparently were at this time stationed at Berhampore, and the admissions from venereal alone in [illegible] hospital were stated to be—in April 168, May 172. [illegible] to the inadequacy of the hospital accommodation [illegible] the time of the Board.

(18th July).—Mr. J. P. Wade submits a treatise on fevers to [illegible] which it was said it is the Board's to report. The treatise is then copied in full in the records, and occupies 55 pages! His principle seems to have been "fever may be deemed invariably to originate from the bowels and [illegible] medicines as operate on these parts by evacuation or otherwise,

[illegible] treatise concerning practice at this date.

[illegible] Jones wished to appeal to the Board (12 [illegible] for permission to retail medicine to the public of Calcutta, his excuse being the very great demand for medicine on all [illegible] in the Settlement, [illegible] on general [illegible] efficacy," hopes for the sake of humanity, and his own pocket, (for the year before, it appears, he had supplied salts and bark himself) that his indent will be complied with.

[illegible] — [illegible] permission to retail medicine to the public of Calcutta, whereby [illegible] for the opinion of the Board, who say it can be "done so far as it respects the supplying the inhabitants of the settlement with medicines that may be prescribed for them by the surgeons at the presidency;" but not to Captains of ships, or other persons, [illegible] [illegible] [illegible] items and sizes.

G. O. by Lord Cornwallis (11th November).

1. [illegible] ed in the Company's service under this presidency be contained in one general list, that they have commissions granted to them agreeable to their proper ranks as Army Surgeons, and that whenever employed in the civil line they be considered for the time as lent only to that department, and liable always to be recalled to their duty as Military Surgeons. &c.

That the number of full surgeons be fixed and limited to 28, who are thus disposed:—

2	Stationary Members of the Hospital Board.
6	For General Hospitals.
3	For the Corps of Artillery.
6	For the Corps of European Infantry.
1	For the Garrison of Fort William.

CIVIL STATIONS.

5	For the Presidency.
1	For Luckipore.
1	For Benares.
1	For Patna.
1	For Moorshedabad and Cossimbuzar.
1	For Dacca.

28

The Hospital Board is to consist of 3 members. The Physician General of the senior members to be abolished, and he is to be denominated President of the Hospital Board. The Chief Surgeon the 2nd Member, and the 3rd the Head Surgeon of the General Hospital at the presidency station.

That these stations be always filled up by selection from the most capable practitioners, without any regard to seniority, and no person to be eligible thereto who has not served two complete years immediately preceding the time at which they might be candidates for such appointments, either as Presidency Surgeon, Surgeon to a European Battalion, or to the Garrison of Fort William.

Full Surgeons to be increased or diminished, should circumstances demand an increase or decrease in the number of European battalions on the establishment.

Eighty Assistant Surgeons were detailed for Military duties as follows:—

6 General Hospitals, reckoning 6 to the Presidency and 4 to the other	26
3 Battalions of Artillery	3
4 Battalions of European Infantry	6
6 Regiments of Native Cavalry	2
36 Battalions of Sepoys	36
Chunar and the European Invalid Buxar, Monghyr, Budgebudge, Insane Hospital, to each. 1	5
Prince of Wales' Island	2
	80

It was resolved that should any officers not be required to fill up some of these appointments, they might be employed at the pleasure of the Board "with Collectors of Revenue, Commercial Agents with embassies," &c., &c., subject to certain regulations which enjoined them to accept promotion when offered, or else [illegible] passed over [illegible] of the service.

The 14th paragraph is as follows, and it would be well if the [illegible] it [illegible]

"The Governor-General in Council deeming the practice and [illegible] upon General Hospitals to be [illegible] and increasing the [illegible] pleased to direct with a view of qualifying them for the performance of their duty in every rank and station to which they may afterwards succeed in the medical line:—

1st.—That every Assistant Surgeon, upon his first admission [illegible] be appointed to a General Hospital, where

he shall be obliged to bestow all his time and attention to the practice of the Hospital, for at least three months, merely as a pupil under the immediate eye and direction of the Head Surgeon.

2ndly.—That any pupil who has recommended himself properly to the Head Surgeon by his attention to the hospital practice for three months shall be considered as sufficiently qualified for the duty of hospital mate.

3rdly. That every hospital mate who shall have discharged his duty in that capacity for eighteen months, shall be considered as eligible to succeed to any other medical charge his rank may entitle him to hold, but that the order of his future progression shall be from the duty of an hospital mate to that of a regimental assistant, and from the duty of a regimental assistant, to that of a sepoy battalion or civil station, and that no Assistant Surgeon shall be competent to an appointment to a subordinate civil station who has not served the period prescribed in a General Hospital, and become thereby entitled to succeed to a situation, which is generally considered of more ease and emolument than the duties of the Military Department."

A return from Chunar General Hospital (4th December) shows the following articles in use and store:—

100 Cotts.	286 Sheets.
99 Mattrasses.	400 Caps.
130 Pillows.	226 Gowns.
230 Pillow cases.	234 Shirts.
196 Quilts.	360 Trousers.
	159 Coverlids.

1789.

(Pro., 13th January).—"The Secretary to Government writes to the Board acquainting them that Mr. Head Surgeon S. is permitted to resign the service and to proceed to Europe, and will be recommended to the Honorable Court to allow him *to return to Bengal without prejudice to his rank on his application* to them. "Upon the request made by Mr. S. that in the case of his being shipwrecked on this side of the Cape of Good Hope, he may not be considered as out of the service, you are desired to inform him that it cannot be acceded to as a stipulation, but that in the possible circumstance for which he writes to provide, he may be very certain that proper attention will be shown to the distress of the case."

(Pro., 20th January).—Government having asked the Board for a report on the Insane Hospital and whether any reduction could be effected, they reply that there are 5 classes as patients.

1. Subaltern officers in the service of the Company—For these the Surgeon is allowed the pay and batta of their rank; *viz.*, for Lieut. 173-8; Ensign 134-8-4 a month.

2. Sergeants and Privates in the service, the surgeon draws their pay and batta, &c. (Sergeants 26-6-6; Privates 16-6-6.)

3. Persons not in the service of the rank of gentlemen, for each of whom the surgeons receives the pay and batta of a Lieutenant.

4. Poor Europeans not in the service, for each of whom the pay and batta of private soldier is allowed.

5. For Ladies, for each of whom a Lieutenant's pay and batta is sanctioned.

Besides these sums the Surgeon is allowed Rs. 4 a month for one coolie to each patient. Contingent bills for beds, clothing, &c., all in addition to house rent and his pay.

The Board recommend as a reduction that the payment of Rs. 100 a month should only be given for patients of the 3rd class, that Rs. 10 a month should be allowed for coolies for 4 European patients, that the contingent bill should be discontinued, and the articles supplied by the Surgeon. To all of which the Government agree. At the time the report was written there were the following patients in the Asylum, and the list shows the monthly income of the institution.

	Rs.	As.	P.
1 Lieutenant, and 6 of class 3	1,253	0	0
1 Ensign	134	8	4
2 Sergeants	52	13	0
1 Matross of Artillery	18	6	6
7 Privates and 5 of 4th class	190	7	0
1 Lady 170, and 1 ditto 144	325	0	0
Allowance for servants	141	0	0
Add contingent bill on an average per mensem.	196	0	0
This exclusive of house rent and surgeon's salary	2,311	2	10

And, at their suggestion, people not in the service are not to be admitted without special application to, and permission from, the Governor-General.

(Pro., 29th Feb.).—Mr. Lynch, head surgeon to the General Hospital of the presidency, applies for venetian blinds for the wards instead of the wooden shutters in use, which "being obliged to be kept shut in bad rainy weather greatly obstructs the free circulation of air," &c.

Extracts.

Wholesome Drinking Water.—"Only let the drinking water wells be properly placed as regards distance from buildings and evident sources of pollution; let them be provided with ridge, platform, and drain to lead away waste water; let them be provided with a flooring of perforated stones or tiles, which will allow of the accumulated mud at the bottom being thoroughly removed; let each well be placed under a dome-shaped roof supported by pillars; exclude from the well all pots, lotahs, and ropes; let the water be drawn by a windlass provided with a chain and metal bucket, or still better, let it be raised by a pump, and there will be no difficulty in providing for the troops at almost every station in the presidency, perfectly safe and good drinking water. If a pump is used, the well's mouth may be closed, and light altogether excluded; if the windlass is used, the mouth of the well should be shut as nearly as possible by the application of a dome-shaped iron or wooden cover, having an aperture in the centre just sufficient to allow of the passage of the bucket."—*Dr. F. Macnamara's 5th Report on the Analysis of Potable Waters.*

Podophyllin versus Calomel in a case of Jaundice.—G. H. aged 32, labourer, admitted 16th October. Had acute rheumatism ten years ago; otherwise has always been in good health; three months ago he noticed his urine got gradually darker and his stools paler. After one or two days he suffered from very sharp pain in the right hypochondrium, and then became yellow. The jaundice, which is very marked, and attended with much itching, has existed ever since. On admission he had sickness and headache, and pain below the right ribs increased on pressure. Liver not much below ribs, its superior dulness limit is a little below horizontal nipple line. Pulse 56; temperature 99°8. urine, spec. gr. 10th of dark color, gives a well marked play of colors with nitric acid. Six leeches to right hypochondrium. Magnes sulphat 5j, Succ. Tarax. 5j, Tartarised Ant. gr. $\frac{1}{6}$ ter. die. in water. The leeches removed the pain and tenderness; he improved; appetite was good; he was up and about, but the jaundice remained, and was not altered by Ext. Colch. Acet grs. 3 in pill for five nights, with nitro-muriatic acid during the day. October 26th and 28th, he had in place of Colchicum, Calomel grs. v; but on the 29th the stool was pale and clayey, the urine dark with bile, and the skin deeply tinged. I now ordered Podophyllin gr. i, every night. On 31st the urine was much paler, contained very little bile, the stools were greenish yellow, much more colored than they had yet been, and the skin less yellow. November 4th, the improvement was maintained as regards the urine and stools; the yellow tinge of skin was still evident.

The jaundice was dependent in this instance I think, originally on catarrhal swelling of the lining membrane of the duodenum and lower part of the common chol. duct. Subsequently, perhaps, some inspissated bile may have contributed to keep up the obstruction. The superior effect of Podophyllin to other cholagogues was strikingly evident. I am in the habit of regarding this drug as an expeller of retained bile more than as a promoter of biliary secretion, in which respect, I think, it is surpassed by Calomel and Colchicum. The former is most serviceable, I believe, in those rare conditions where bile seems to be no longer formed, where there is no jaundice, but the stools are of a dirty grey color, and where there is distressing vomiting. Colchicum is, I am sure, often a useful cholagogue, mostly, perhaps, in persons who have a dingy muddy eye and complexion, without being distinctly yellow. Sulphate of Manganese seems to act much the same as Podophyllin. It certainly [illegible] copious bilious flow.—*Dr. H[illegible] Journal.*

Remedies on Tænia, and treatment by Turpeth [illegible] of Male Fern in the Abyssinian Expedition.—An article on the above subject is published in the *Edinburgh Medical Journal* for March, by Dr. Currie, Inspector-General of Hospitals, and Principal Medical Officer of the Abyssinian Expedition.

[illegible] many in India that we [illegible]

All [illegible] Abyssinia [illegible] the prevalence [illegible] that country, and it [illegible] the [illegible] with the parasite, at any rate, if they should remain any length of time in Abyssinia. [illegible] Scotland, should be sent with the army; and Dr. Currie received [illegible] which were distributed [illegible]

"That tape-worm is very prevalent amongst the natives of Abyssinia is, beyond all doubt, a well ascertained fact; and they themselves believe that the great prevalence of the parasite [illegible] the Europeans [illegible] prisoners who indulged in the luxury of raw beef having suffered from tape-worm.

"As opium, it may be remarked, is as fond of raw beef as the Chinese are of opium; both are confirmed national habits, and universally practised. Their custom is to eat the beef soon after the animal is killed, and the flesh still warm, or not more than 24 hours killed; while meat that has been longer killed is cut up in a peculiar fashion into long strips, like sausages, [illegible]

"*Kousso* is the national remedy for tape-worm, and of this [illegible] tree, *Brayera anthelmintica* was not found until we arrived at the great Wandatch range of mountains, 10, or 11,000 feet high, in the Alpine province of Lasta, and about 80 miles north [illegible] occupying the valleys on both sides of that magnificent range of mountains.

"[illegible] tape-worm which occurred in the expeditionary force were not very numerous; and as the troops, European and Native, came direct from India, where tape-worm is common, it was impossible to conjecture whether the instances of it were of Indian or Abyssinian origin. A certain length of time, no doubt, is necessary for the development of the parasite, and it is probable, therefore, more cases may have occurred after the [illegible]

"In the cases that occurred amongst the troops, the extract was fairly tried, and all the reports made to me were unanimous in favour of its efficacy as a vermicide. The desired effect was generally obtained with a dose of 24 grains, but in an instance, when this failed, the quantity was increased to one ounce; and this over-dose, it is proper to mention, brought on severe dysenteric symptoms."

From the experience Dr. Currie gained in the campaign, he believes himself justified in stating that, "this drug in the form of ethereal extract, besides possessing the advantages of being easily taken, and in moderately-sized doses, is more certain in its therapeutic effects than any other anthelmintic [illegible]

VACCINATION FROM THE HEIFER.—Dr. Blanc of Abyssinian renown has established a stable for calves, at his residence in London, where they are received and vaccinated, and dismissed when the disease is over.

"Dr. Blanc has constructed an operating table on which the [illegible] scratches made in rows, with a lancet charged with cow-pox, whose origin was direct from the cow, and had not passed [illegible] been vaccinated from this calf. One child presented six vesicles of the eighth day, one of the ninth, and one of the tenth. For re-vaccination of the inmates of schools and institutions, the operation direct from the calf offers many advantages"—*Medical Times, Gazette, and Medical News, and London Lancet.*

PRESERVATION OF SPECIMENS.—A simple way of preserving animal specimens for fine dissection is described by Dr. Alcock.

The method adopted is to prepare a saturated solution of corrosive [illegible] in alcohol, and watch a dissection in water to [illegible] in progress, a small quantity, as half a tea-spoonful, of the solution is to be added from day to day if the slightest appearance of putrifaction is observed; but no more if it is to be used than is absolutely necessary: and by the time the dissection is completed the specimen has become impenetrable from the action of the corrosive sublimate with the tissues, and it may then be kept in pure water, without spoil, or mounted in the usual way.—*Quarterly Journal of Science.*

A NEW STYPTIC COLLODION.—M. Carlo Pavesi gives the following recipe.—Collodion 100 parts, carbolic acid 10 parts, tannin 5 parts, benzoic acid 3 parts.

Applied with a pencil [illegible] dries rapidly, and, of a brownish colour, gives a pellicle similar to ordinary collodion, and instantly [illegible]—*Gazzetta Toscana.*

TREATMENT OF THE VOMITING OF PREGNANCY.—Mr. J. Lee Harrison recommends that in these cases hypodermic injection of morphia be tried. He gives the report of a very decided and serious case in which nearly every conceivable remedy had been employed in vain. He then tried the sub-cutaneous injection of acetate of morphia, in doses of one-sixth of a grain, three times a day, and this instantly arrested the vomiting.—*London Medical Journal.*

CINCHONA BARK.—At a recent meeting of the Pharmaceutical Society, Mr. J. E. Howard, at the request of the president, made a few observations on certain specimens of Cinchona bark cultivated in the East Indies, specimens of which were placed upon the table, and expressed a hope that at some future time he should have an opportunity of going more fully into the subject. He said that the number of varieties and species now cultivated in the East Indies was somewhat embarrassing, many of them being exact reproductions of the barks found in South America; whilst some varieties did not appear to correspond exactly with any that they were as yet acquainted with from South America. The subject, therefore, still required investigation among these new varieties. Mr. Broughton had quite recently found a variety which was quite new to them, possessing lanceolated [illegible] appearance to the *Cinchona lancifolia*, the bark differing entirely from the characteristic of the bark of the *lancifolia*, and pertaining more to that of the best species of Pitayo or of Loja. Mr. Broughton had found this variety to be so extraordinarily rich in quinine that he had obtained from it the almost incredible quantity of 10 per cent. of sulphate of quinine. Though this fact had only been communicated to him (Mr. Howard) in a letter from Mr. Broughton, there could not be any objection to his mentioning it at that meeting. He had himself examined a small portion of the bark, and his examination fully confirmed Mr. Broughton's analysis. This circumstance, together with other collateral observations, showed the great importance of attending with even minute accuracy to discrimination of the species and varieties which were already growing luxuriantly in the East Indies, some of which were so very much more productive than others. The neighbouring plants too, that he had mentioned, did not produce one-third of the amount of sulphate of quinine. In Mr. Broughton's last report he mentioned the circumstances connected with finding this species and his analysis of it, and he [illegible] had found 5 per cent. of sulphate of quinine, but since then he had obtained what he (Mr. Howard) had just mentioned. One specimen on the table was this extraordinarily rich bark. There was another specimen, which was the third harvest of bark renewed from the same tree, the *Cinchona succirubra*, or red bark of commerce. The bark had been three times stripped from the tree and then renewed; and certainly it was greatly improved from the original bark. Some species of wood on the table were transverse sections of some of the [illegible] which had been stripped of their bark and had replaced it. They would observe the lines representing the first, second, third, and fourth growth, the old part contrasting with the appearance of the new.

It appeared that the effect of cultivation was to increase the value of the product. There was one thing to be noticed, and that was that perhaps the quantity of cinchonidine was rather larger in East Indian bark than in Peruvian bark. The greater warmth and dryness of the atmosphere in the East Indies promoted [illegible] to the production of this alkaloid.—*Pharmaceutical Journal.*

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE POISON AND ON THE INJECTION OF CERTAIN FLUIDS INTO THE VENOUS CIRCULATION AS ANTIDOTES, AND ON THE APPLICATION OF THE LIGATURE AND ACTUAL CAUTERY.

By J. Fayrer, M.D., C.S.I.

Present: Dr. Fayrer; Dr. Ewart, Professor of Physiology; and Mr. Sceva.—June 12th, 1869.

Experiment No. 1.

A fowl was bitten in the thigh by a spectacled cobra that had been kept in confinement for some weeks, had bitten before, and was, therefore, not fresh. The fowl was bitten at 3 p. m.

At 3-1·50.—Fowl staggering; fifteen drops of strong Condy's solution, furnished by Messrs. Scott, Thompson and Company, was injected with the hypodermic syringe into the fowl's thigh.

3-2·50.—Fell down paralysed.

3-4.—Lies almost dead; just breathing.

3-5.—Convulsed.

3-7.—Dead.

Death occurred in seven minutes: but the bird was evidently unconscious after the first 2½ minutes. I could not recognise any good effect from the injection.

Experiment No. 2.

The left crural vein of a dog was exposed, ready to receive the injection. The dog was then bitten by a cobra in the right thigh at 3-20 p. m. The cobra was not fresh, it had been in captivity for some time, and had bitten before; but it was tolerably vigorous.

3-23.—Dog is excited and restless.

3-24.—Same condition; whining.

3-27.—Much excited; trying to break loose; is salivated; breathing hurried.

3-37.—Is beginning to show signs of the influence of the poison; is slightly convulsed; falls over.

3-37-30.—Injected 60 drops of liquor ammoniæ sp. gr. ·959, into the crural vein; followed immediately by convulsive twitchings of mouth and limbs.

3-42.—Lying down, very low, almost motionless; irregular action of the heart; injected 40 drops more of the liquor ammoniæ.

3-43.—No change; heart's action very feeble.

3-44.—Lies perfectly still, as though dead; no respiration; heart beats very irregularly; 35 pulsations in 30 seconds.

3-45.—Dead.

Post-mortem examination of body at 4-20 p. m. Lungs, pallid; no congestion. Heart, right side much distended with black clots. Left ventricle contained a little dark fluid blood. The viscera generally were pallid; but the liver was somewhat congested. Brain,—cerebral substance free from congestion; vessels on surface slightly distended with blood. The blood generally coagulated firmly.

Experiment No. 3.

The external jugular vein of a dog was exposed at 3-34 p. m.; 40 drops of the liquor potassæ permanganat: (Condy's) was injected into the vein at 3-35.

No effect produced at the time; the dog did not appear to take any notice of the injection.

3-40.—Dog apparently not affected.

3-45.—Seems rather depressed, but this is not marked; it may be fear.

3-48.—Bitten by a large cobra (not fresh, for it has been some time in captivity, and has bitten before) in the thigh. The fang punctures were at once washed with the Condy's solution, which was well rubbed in.

3-49.—Bitten leg partially paralysed.

3-50.—Lying down; when raised can stand, but quickly lies down again; is quite intelligent.

3-51.—Droops his head.

3-52.—60 more drops of the fluid injected into the vein.

3-54.—5ii injected into the bowel; is able to sit or stand, but is very weak. The injection of the Condy was not followed by convulsions as in the case of the liquor ammoniæ.

3-58.—Lies down; head falls over; breathing hurried; rises and staggers a little, and sits down again.

4. p. m.— Lies sluggish and dejected; can walk when raised, but staggers and soon sits down again.

4-5.—Can still stand and walk with staggering gait.

4-7.—Lying down, but gets up and walks a few steps; head drooping, and look dejected; twitching of muscles generally.

4-8.—When put on his legs can still stand; breathing hurried; coat staring.

4-12.— 40 more drops injected into jugular vein.

Slight twitching of muscles generally; lies down on his side, cannot rise; limbs paralysed; pupils dilated; slight convulsions of extremities, and muscular system generally; breathing catching and rather slow.

4-22.—Motionless; heart still beats 50 in the minute; no respiration.

4-24.—Heart still felt.

4-25.—Dead.

Bitten at 3-18—Dead at 4-25; in 37 minutes.

Death occurred in about the usual time, and with the usual symptoms in which it occurs, when a dog is bitten by a cobra. I do not believe the effects of the poison were in any way influenced by the permanganate.

Post-mortem at 4-40 p. m. Lungs much collapsed and very pallid. Both sides of heart full of fluid blood; great vessels distended. The blood coagulated firmly when let out of the heart and vessels. Abdominal viscera not so pallid as in the other dog. Brain vessels on surface, full of blood: cerebral substance pale, scarcely any puncta.

Experiment No. 4.

A fowl bitten by a cobra (not fresh) in the thigh, at 4-45 p. m; 20 drops of liquor ammonia having previously, at 4-43, been hypodermically injected into the thigh, no apparent effect produced by the ammonia thus injected. Bitten by the cobra at 4-45 p. m.; in 30 seconds it was in violent convulsions.

4-46.—20 more drops injected.

Dead before it could be placed on the ground.

Experiment No. 5.

The following experiments were tried with the object of again testing the effect of the cobra poison on itself, or on an another cobra.

A cobra was bitten sufficiently near the tail to avoid the chance of injuring any of the viscera, by another full-grown, fresh, and vigorous cobra. The snake bit deeply, plunging its fangs twice or thrice into the flesh of the other cobra, which was then put aside in a separate cage, and watched.

13th,	6 a. m.	...	...	no change.
,,	7 p. m.	...	...	do.
14th,	6 a. m.	...	...	do.
,,	6 p. m.	...	...	do.
15th,	6 a. m.	...	...	do.

The snake evidently has not suffered.

Experiment No. 6.

A vigorous and fresh full-grown cobra, with one ocellus in the hood (Kwantiah) of the natives, was made to bite himself

[illegible] at 4.18 p.m. He bit himself [illegible] as he would have bitten another snake, brought [illegible] and caused the snake's head [illegible]

Was not the least affected on the 15th three days after the bite.

These experiments, which were very carefully performed, tend to prove that the cobra cannot poison itself or its own [illegible]

Drs. Fayrer, Lewin, Walker, and Mr. Selvo.—June 19th, 1869.

Experiment No. 7.

A cat was bitten at 2.43 p.m. in the right thigh, by a large dubois. The snake had been long in captivity, and was, therefore, most probably not vigorous, though active [illegible]

2.48.—Trembling of the muscles [illegible]

3-12. The cat appears to be unaffected.

3-15. The dubois again moves to close his jaws on the cat's thigh, though evidently unwilling to bite.

3.44.—The cat seems sluggish, and is evidently now feeling the poison.

3-45.—Bitten by a cobra on the thigh.

3-46.—The cat is unsteady in its gait; breathes hard; looks distressed.

3.47.—Cat is restless; tries to rise, and staggers.

4-10.—Tries to stand, but falls over.

4.18.—Respiration very hurried; cannot stand; twitching [illegible]

4.24.—Lies quite paralysed; pupils dilated; breathing hard.

4-27.—Convulsed.

4-30.—Dead.

The cat was bitten by the dubois at 2-43 p. m., and again at 3-15. The snake was old and feeble; it has been in captivity for more than six months, during which time it has touched neither food nor water, and yet it was active and vicious, hissing fiercely at any one who came near it; that it was capable of secreting poison was evident in later experiments.

The cobra bit at 2.45, and death occurred at 4.30; that is, in one hour and forty-seven minutes. The cobra was also not fresh, and its poison was weak, perhaps scanty. There was nothing whatever in this experiment to make us think that the cobra's poison proved antidotal to that of the dubois; on the contrary, it rather expedited death.

Experiment No. 8.

A fowl was bitten in the thigh by the same dubois at 3-40. The snake would not bite until his jaws were closed on the bird's thigh.

3-44.—The fowl, whilst walking about with rather a sluggish pace, suddenly [illegible] convulsions. It was immediately bitten in the thigh by a cobra. It continued unconscious and convulsed, and was dead at 3-46; that is, in six minutes after it was bitten by the viper. Had this viper been fresh, the bird would probably not have lived one minute.

Experiment No. 9.

Another fowl bitten by the same dubois at 3-56 p. m.

3.58.—[illegible]

3-59.—Bitten by a cobra in the thigh; lies down.

4.2.—[illegible]

4.3.—[illegible]

4-5.—Dead, in nine minutes.

These three experiments, I think, dispose of the question of the poison of the family of Viperidæ being antidotal to the others.

In these cases, the viper was old and exhausted, and yet his poison was [illegible]. The poison of the cobra, which was not a partially exhausted snake selected on purpose, had no counteracting effect. The only thing proved is the terribly deadly nature of the dubois, which after such long confinement, without food or water, yet retained the power of causing death.*

These experiments were made in reference to certain suggestions that have appeared in the journals, but not with any expectation on my part that any other result than that which occurred could take place. The poison of the deadly snakes, of whatever family, kills by paralysing the nerve centres, and it appears unreasonable to expect [illegible] to prove antidotal to [illegible] in the cases proved to be so. [illegible] of venomous snake.

Experiment No. 10.

A fowl was bitten by the same dubois in the thigh at 3.7 p.m.

4-10—Sitting down; looks sluggish.

4-15.—Rises and runs about, but is lame.

4-27.—Walks, but is very lame on the bitten leg.

4-45.—Still walks about, but is sluggish and lame, and looks very dejected.

The fowl after this, began to recover, and on the 21st ten days after, was quite well. The snake was evidently not [illegible] exhausted when he bit this bird.

Experiment No. 11.

The external jugular vein of a dog was exposed at 3-6 p.m., and four drops of cobra-poison were injected; at least one drop was lost, the other three entered the vein.

3-10.—Dog looks dejected, and ears drooping; he lies down.

3-35.—[illegible] being sluggish, no symptoms of poisoning.

3-46.—Very sluggish; lies down.

3-47.—Liquor ammoniæ, sp. gr. ·959, 60 drops injected into jugular vein; dog lies quiet. Heart beating rapidly; respiration very feeble.

3-54.—Heart's action very rapid; breathing rapid; muscular twitchings.

3-57.—Injected 60 more drops into the vein; muscular twitchings [illegible]

3-59.—Dead.

Poison [illegible] at 3-4; death at 3.59. Death in 55 minutes. The [illegible] of poison was very slow from a weakened snake and effect was produced by the ammonia.

Experiment No. 12.

The [illegible] vein was exposed in a dog. It was then bitten in the thigh by a fresh cobra at 3-27.

3-28.—Staggering; excited, springing; howling violently; [illegible]

3-29.—[illegible] sitting down.

3-30.—Head drooping.

3-33.—Lying on its side, slightly convulsed; sixty drops of a solution of quinine, of the strength of one grain in eight drops was injected into the jugular vein.

3-34.—The dog lies on its side, still slightly convulsed.

3-35.—Dead.

Bitten at 3-27, dead at 3-35, in seven minutes. The [illegible] evidently did no good.

Experiment No. 13.

Equal [illegible] and liquor ammoniæ sp. gr. ·959, were mixed together, and fifteen drops of the mixed fluid were injected with the hypodermic syringe into a pigeon's thigh at 4-30 p.m. Pigeon crouched immediately [illegible] was unable to stand; the beak resting on the ground.

4-32.—Convulsed [illegible] convulsive movements of the [illegible]

4-32.—Dead.

* [illegible] was not [illegible] deprived [illegible] and [illegible] would take [illegible]

Injected at 4-30; death at 4-32, in two minutes. This experiment is very unfavorable to the theory of the antidotal action of liquor ammoniæ.

Experiment No. 14.

The external jugular vein of a large and powerful dog having been exposed, ten (10) drops of fresh cobra-poison were injected into it at 4-24 with the hypodermic syringe.

4-24-30. The dog staggered, was convulsed, and fell over foaming at the mouth.

4-25.—Violently convulsed, but with no out-cry or sign of suffering.

Sixty drops of liquor ammonia, sp. gr. ·959, injected. Dead.

Death occurred in about 70 seconds; shewing the frightful virulence of the poison when it finds entry by a large blood vessel.

How can such a death be explained otherwise than by exhaustion of the nerve centres? Any theory of blood-change is surely totally inapplicable here.

Present: Dr. Fayrer, Dr. Ewart, Professor of Physiology; and Dr. Sceva.—June 26th, 1869.

Experiment No. 15.

A Pariah dog was bitten in the fore-arm by a cobra (kalla keautia) at 3-2 p.m.

A ligature had been thrown round the limb above the bitten part, which was immediately tightened; a pointed steel, heated to a red heat, was then, at 3-3 p.m., inserted into the punctures, and the wounds were thoroughly cauterized.

3-7.—The dog is restless, and is apparently under the influence of the poison.

3-12.—Staggers as he walks.

3-14.—Forty drops of liquor ammoniæ sp. gr. ·959, diluted with three parts of water, were injected into the jugular vein.

3-17.—The dog runs about excited; he was partially convulsed during the injection of the ammonia; now sits up, and then falls over backwards; breathing quickly.

3-20.—Lies down; is salivated.

3-27.—Sits down; paws the air; muscular twitchings.

3-38.—Lying on his side; convulsed.

3-44.—Lies paralysed; heart still beats, but no respiration.

3-45.—Dead.

Notwithstanding the ligature, which was tightened immediately, the actual cautery, which also immediately followed the cobra's fangs, and the injection of ammonia into the venous circulation, the snake-poison proved fatal to a full-grown dog in forty-three minutes.

Experiment No. 16.

A dog was bitten by a fresh cobra (kalla keautia) in the fore-arm at 3-38 p.m.: a ligature was immediately tightened round the limb above the wound. The actual cautery was at once applied, until the fang wounds and the adjacent parts were completely disorganized.

3-42.—The dog is sitting, but reels as though he would fall over.

3-49.—Rises and walks with a staggering gait.

3-54.—Sits down; attempts to get up and falls over backwards.

4-57.—Is convulsed; falls over, cannot stand; hurried breathing.

4-4.—Cannot move; lies paralysed; heart still beating; respiration almost ceased; pupils widely dilated.

4-6.—Lies on his side; convulsed.

4-12.—No respiration; but heart still beats feebly.

4-13.—Dead.

In this case also, notwithstanding the ligature which was applied as tightly as two persons could pull it round the leg, and the deep and thorough actual cauterization, immediately after the bite, the snake-poison found entry into the system, and proved fatal in thirty-five minutes. The dog was much smaller than that of the first experiment.

Nothing, it seems to me, can more strongly demonstrate the extremely subtle and virulent nature of the cobra-poison than those experiments; nothing, I think, is more significant of the improbability of anything proving to be an antidote. If the poison find entry into the blood vessels, and be carried to the nerve centres, I am inclined to believe that nothing can prove of any avail, excepting in those cases where the bite is imperfect, the quantity or the quality of the poison diminished or deteriorated, or the snake itself is young, weak, exhausted, or is one of less poisonous family; such, I believe, are the only cases in which recovery occurs through the inherent vigour of the animal or person bitten, perhaps aided by stimulants and excitement. The favourable result is attributed, and naturally enough, by those who do not understand the *modus lædendi* of the venom, to the treatment and the so-called antidote. That we can aid in such recoveries, and that we may do much to help the sufferer through the troubles arising from general disorder and secondary blood poisoning, I have no doubt; and I would offer every encouragement to all to persevere in their attempts. But I must state my conviction that nothing that can properly be called an antidote to cobra or viper poison exists; and the more this is known the better, for mistaken notions on such an important matter can only do harm, and may be the cause of losing, rather than of saving, life.

My belief is that, if an animal, and probably a man, be fairly bitten by a fresh and vigorous cobra or daboia, it, or he, will inevitably succumb; unless some immediate and direct method of arresting the entry of the poison into the circulation be practised.

That such may be done I will not deny; but the two experiments just recorded, performed with the greatest care and speed, by two surgeons accustomed to such operations, shew that, at the least, it is very difficult. The moment of time that intervenes between the injection of the snake-poison by the powerful maxillary muscles through the tube-like fang, into the minute blood-vessels of the part, and the application of the ligature and actual cautery is sufficient to allow of the entry of the poison into the circulation, and this reaching the nerve centres even in a small quantity, may prove fatal. The ligature is evidently very unreliable when applied to large parts of the body, such as the limbs; for it is almost physically impossible to compress the part so tightly as to stop the circulation; and unless this be done to the depth of the penetration of the snake's fangs, it is obvious that it can only be of very partial effect in preventing the entry of the poison. On a finger or a [illegible] ligature might be of more service, as the smaller part might be thoroughly strangulated; but unless the ligature [illegible] applied immediately, it is obvious that it would be useless even there, for the poison would have already entered, and be on its course towards the nerve-centres. How quickly this occurs is proved by those experiments in which the poison was injected directly into the jugular vein. What took place there, with the hypodermic needle inserted into the jugular vein, has its exact counterpart in the case of the cobra's fang, inserted, as it must be, when it penetrates a vascular part, into the minute veins.

The same may be said of the actual cautery. Unless the hot iron enter the puncture directly after the fang has been withdrawn, the poison is already far on its way towards the centres, and the burning, though it destroys the tissues and such of the poison as may not yet have entered the cauterization, can have no influence on that which is already beyond its reach. But as the

[illegible] ...ly), ...ly and ...ly ...ed to a certain extent the ...ence of the poison, but ...ld be found necessary to be speedily and effectively ...ed, in the hope that the amount of poison ...n, and may have already ...ed, or may [illegible] the system, may be less than is sufficient to cause death.

...ment in the true sense of the term, to ...ly ...ent that would counteract or antidote so as to follow, overtake, and neutralize the venom in the blood, or that would have the power of counteracting and overwhelming the deadly influence it has exerted on the vital forces. Such a ... is still to be found, and our present experience of the action of drugs does not lead to hopeful anticipation that we shall find it.

But I repeat that where the poisonous effects are produced ... poison system, or where the secondary consequences are to be dealt with, we may do much to aid the natural forces in ... about recovery. This is, however, what is meant by an antidote.

Experiment No. 17.

A ... and powerful dog had the right external jugular vein exposed. Twenty drops of a mixture of three ounces of water, three drops of the same [illegible] and [illegible] ammonia, to [illegible] parts, was then injected ... with the [illegible] syringe into the vein. The time of the ... was 4-27 p.m. The effect was instantaneous: the dog struggled, howled, and was convulsed on the table: he was immediately released and placed on the ground, but was already almost unconscious and convulsed. He made an effort to rise on his legs, and fell prone on his belly. Within one minute respiration had ceased, though the heart's action continued faintly. This ceased, and at 4-30 a.m. he was quite dead. The action of the poison with the ammonia was frightfully rapid ... Death ... in two minutes and a half, complete unconsciousness within a minute; and only by the faint beating of the heart, which only continued for two and a half minutes, was any sign of life manifested. This surely is fatal to the theory of ammonia injected into the circulation being of any benefit in snake-poisoning. In this case the poison and the so-called antidote were injected synchronously; the result was almost instant death.

The experiment was performed by Dr. Ewart and myself with the greatest ... [illegible] ... we entered the vein.

Experiment No. 18.

The cobra that bit the dog in the first experiment bit a fowl in the thigh, at 3-46 p.m. The bird immediately began to limp, and then crouched, and then fell over.

3-47.—Head fallen over, beak resting on the ground.

4-0 — ... dead.

Death occurred in three minutes.

A ... bitten by the same snake at 3-50 p.m., in the thigh.

3-51.—Drooping his wings.

3-56.—Sits down, head resting on the ground.

3-57.—Is convulsed.

4 p.m.—Dead on the ...

A third fowl ... bitten in the thigh, at 3-51 p.m., shortly after drooped.

4-0.—Convulsed.

4-2.—Dead.

Dead in 11 minutes.

A ... fowl bitten by the same ... at 4-5 p.m.

4-8.—... head resting on the ground.

4-10.—... convulsed.

4-17.—Still convulsed.

4-20.—Dead in 17 minutes.

A fifth fowl bitten in the thigh by the same cobra at 4-13 p.m. 4-25.—Crouches; eyes closing.

4-24.—Head drooping, resting on beak. 4-26.—Quite paralysed; convulsed.

4-35.—Dead in 22 minutes.

A pigeon was bitten in the thigh by the same cobra at 4-37 p.m.

4-47.—The pigeon is drooping, and when he stands it is on one leg, and then falls over again.

5-22.—Dead in 45 minutes.

This was the ninth animal bitten by the cobra in rapid succession, and still it is apparently not quite exhausted.

A ... fowl bitten on the thigh by the same cobra at 4-32 p.m.

4-35.—Crouching. 4-47.—Staggers.

5-45.—Lying down insensible.

6-5.—Dead in 99 minutes.

A ... fowl bitten by the same cobra in the thigh at 4-34 p.m.

4-37.—Crouches. 4-47.—Seems sluggish, and limps.

5-27 [illegible] 5-30 [illegible]—Lying down, and eyes half closed; unable to walk.

5-58 [illegible] 6 p.m.—Is recovering, walks sluggishly and limps, but is evidently regaining strength.

The object of this experiment was to test the extent of poison possessed by the cobra. It destroyed one dog six, fowls, and a pigeon in rapid succession, but the intervals between the bite and the death of each was prolonged, showing the gradual diminution of power at each bite. The seventh fowl poisoned was only slightly so, and recovered.

The ... was very large for a very vigorous ... and yet [illegible] ... creatures destroyed by a rapid succession of bites. The experiment proves that the snake becomes weaker by biting until quite exhausted.

Experiment No. 19.

A ... was bitten by a fresh cobra [illegible] ... [illegible], suddenly far from the cobra. The snake was persistently scraped off. The snake bit fiercely and repeatedly at 4-54 p.m.

6 p.m.—No change.

On the 28th June, at 6 a.m., there was no change.

The object of this experiment was to repeat the test of the inferiority of the cobra poison to the viper. The result tends to show that it is numerous.

DEATHS FROM SNAKE-BITES. A TRIAL CONDENSED FROM THE SESSIONS REPORT.

Communicated by Dr. Fayrer, C.S.I.

Poonai Fatmah and Joomun Fatmah are brought to trial for ..., ... at ... the 17th day of October, 1868, at Hardah, Zillah Purneah, committed culpable homicide not ..., by causing the deaths of [illegible] Mongroo and [illegible].

1. [illegible] Mussamat, wife of Dhanpat, aged 20 years, Mussamat Bachu, Dhanpat Sonargaon, Zillah Mungair, labourer. I cannot recollect day or month. I came to Chitrapore, Zillah Purneah, being engaged to make bricks for the Darjeeling ... Company's road, and was learning how to charm snakes from the ... Poonai and Joomun. At length, on a Sunday, ... wanted to move the snake but not. I said not ... [illegible] ... to bite me in any part of the body. They then

pulled my ears in a tyrannical manner, and said, Why are you afraid? If the snake does bite, we will charm you, and recover you. Then they brought three snakes, two keraits and one keautiah, the latter a young snake, but all were poisonous. The two smaller snakes they put aside, and one large kerait two *hatts* long, they placed in front of us, and made Titroo place his right hand on the ground, and made the snake crawl on to his hand; but at first the snake did not bite him, then Poonai struck the snake with a cane, and the snake immediately bit Titroo on his right fore-finger. After this, in the same manner the snake was made to bite Menghon on the right hand, and then in the same manner the right hand of Jikree. After this, in the same manner the snake was made to bite me on the right wrist: the snake then appeared to be dead. After this, the prisoners having made incantations over the snake brought it to life again, and having placed some vermilion on its head, let it go free in a paddy field. After the snake had bitten Titroo he was attacked with great thirst, and began to foam at the mouth: he became senseless. At one *pahur* of the night remaining, Titroo was bitten, and he died half an hour before daybreak. Menghon and Jikree appeared well after Titroo's death; the poison did not seem to have affected them. The prisoners then ran away; Menghon and Jikree returned to their houses, and I heard they died there at mid-day. I was then senseless after I was bitten, my body and head began to turn round, and great perspiration commenced, with severe pain in the stomach, and my eyesight became dim, then I became senseless. I was brought from Bahadurpore to the Hospital, and remained there five or six days, when I became sensible again. All this took place at Bahadurpore in the court-yard of Moosum: he is not related to the prisoners, neither did he assist them. Some five or six other men besides we four were made to sit down by the prisoners in order that the snake might be made to bite them; but owing to the snake becoming weak, they were not bitten. Seeing all the above, they ran away.

2. Bechoo Sirdar, son of Dookhun, aged 22 years, Moosabar of Manikpore, Pergunnah Secundra, Zillah Monghyr, labourer.—The prisoners Poonai and Joomun were, in Assin, teaching Titroo, Menghon, Jikree, Etbari, Laloo, &c., some ten men, snake incantations, and I was also being taught by them. At length, on a Sunday night, the prisoners produced from an earthen pot two keraits and a keautiah, snakes, and began to teach us the incantations, and began to make the snakes move about in front of us all. We became afraid, whereupon the prisoners said, Why do you fear? If the snakes bite you, we are *goorooo*, and will soon restore you. After this they made us place our right hands on the ground, and began to make the big kerait snake move towards our heads, we immediately from fear raised our hands. Upon this the prisoners struck us with rattans, and when the snake moved to a distance we again placed our hands on the ground. Then the prisoners took the snakes near to Titroo, Menghon, Jikree, and Etwarree, and made the snake, by striking it with a rattan, bite Titroo on the fore-finger of the right hand; the throat of Titroo immediately became dry, and he became senseless; then the snake was made to bite Menghon on the fore-finger of the right hand, but Menghon did not suffer or become senseless. After this the snake was made to bite Jikree on the right hand; he did not either become senseless, but remained talking. Then the snake was made to bite Etwaree on the right wrist; he did not appear to suffer. Then Titroo died two hours before dawn, and the prisoners then ran away. We went in search of them, and at 10 a. m. we found them and seized them in a rice field at Gurnabaree, west of the road, and took them to Bahadurpore. We told them to restore Titroo to life again, but they could not do it, but went and sat down at a distance. Then the police came, and we made the prisoners over to them.

I heard Menghon and Jikree died on the day following; Etwarree was placed on a cart and brought to Hospital. When Titroo became senseless the prisoners tried to recover the snake, which became torpid after biting Etwarree. The prisoners took the snakes with them when they went off. I did not see them let go by the prisoners. We were to pay one or two rupees for being taught; we were told that if we were bitten by a snake, in repeating the incantations, and fanning the snake, we should recover.

Two other witnesses are examined, but they give similar evidence to the preceding.

The information and deposition of Dr. David Picachy, Civil Surgeon of Purneah, taken before me, J. R. Muspratt, Sessions Judge of Purneah, at Purneah, on this twelfth day of January, 1869, who being put on his oath, saith as follows:

Ques.—Did you examine the bodies of Titroo, Menghon, and Jikree?

Ans.—Yes I did, and found that they had died from the effects of snake-poison. There was nothing abnormal about their internal organs, which could be said to be the result of disease.

Ques.—In what way did the three bodies exhibit the effects of snake-poison?

Ans.—Externally there were the marks of snake bites on their hands and arms, and internally the blood was in a fluid state, and the brain vessels deeply congested; the former state—*viz.*, the fluid state of the blood—being particularly indicative of snake-poison.

Ques.—Did you examine the wound of Etwarree?

Ans.—Yes, and found a scratch on the fore-arm; he was partially senseless when received into Hospital, but could reply to questions I put to him. His wound or scratch looked like that which would be inflicted by a snake. I treated him with ammonia for three days, when he recovered.

Ques.—How do you account for the escape of Etwarree, the other three having died?

Ans.—He was the last person bitten, and must have received less poison than the others.

Ques.—Was he in your opinion suffering from the bite of a poisonous snake?

Ans.—Yes, he was lethargic and depressed; there was very slight swelling about the scratch. The wounds on the three dead bodies presented a livid appearance, and the corpses were swollen and in a semi-decomposed state, resulting from rapid chemical change after death by animal poison.

Ques. by prisoners.—None.

These men were sentenced to five years' imprisonment by the Sessions Judge of Purneah, which sentence was confirmed on appeal by the High Court of Calcutta.

The snakes, as described by the witnesses, are two keraits (Bungarus Cœrulus) and one keautiah (Cobra di Capella), the variety with one occellus on the hood. The larger snake, said to be a Bungarus, bit four men, three died, one appears to have narrowly escaped.

REPORT ON TYPHOID FEVER IN THE 92nd GORDON HIGHLANDERS.

By W. Munro, M.D. C.B.,

Deputy Inspector-General of Hospitals, H. M. F.

The following report on typhoid fever was compiled [illegible] instructions from the Inspector-General of Hospitals, British Forces) from information supplied by the Surgeon of the regiment in his answers to a series of medical questions forwarded to him by myself on the subject:

In the report I gave a short history of the regiment [illegible] arrival in India, mentioned the numerical [illegible] strength of the corps at the time of departure from [illegible] stated the diseases prevalent amongst all classes from the date of embarkation up to the month of August, 1868, and briefly gave my opinion as to how the health of the corps might be expected to become more or less prevalent in the regiment, and endeavoured to explain its origin.

The following pages contain my remarks on these different points, which are now [illegible]

For twenty-one months prior to embarkation for India, the [illegible] Highlanders had been serving in Ireland, and had been garrisoned chiefly in Dublin for fifteen out of the twenty-one months. For the remaining six the regiment had been mostly at the Curragh, undergoing a course of camp instruction; and one wing had been detached from head-quarters for a short time to afford assistance to the civil authorities of the counties of Tipperary and Cork during the Fenian disturbances. During this service of twenty-one months there was no special sickness in the regiment, but in that portion of the corps stationed in Cork one case of typhoid fever occurred immediately before embarkation, but which case was left behind in hospital when the regiment sailed.

During eighteen of the twenty-one months there was no [illegible] of the composition of the regiment, which was as follows including the depôt:—678 Scotch, 137 English, and 58 Irish. Of this strength, 216 were under 20 years of age, 518 under 30, and 130 above 30 but under 40.

The regiment while serving in Ireland underwent a good deal of exposure and fatigue, but the men continued apparently robust and healthy.

About three months before embarkation, 135 general service recruits joined the regiment, of whom 123 were English and 12 Scotch; the former of the labouring classes, from the Leeds, Liverpool, and Bristol districts. The average age of these 135 recruits was 19$\frac{8}{12}$ years, but some of them were much [illegible] and the majority of them though without physical defects which could have been causes of rejection, were pronounced by the Surgeon of the regiment to be not only deficient in physique, but pale and sickly-looking.

The regiment embarked at Cork 727 strong, and the ships (new transports) in which it sailed were roomy, comfortable, and well-ventilated; and the food supplied during the voyage was good and sufficient in quantity.

There was little sickness amongst the men during the voyage, but there were five cases of measles, and three of *simple fever*, and there was one fatal case of pneumonia. This was the only death amongst the men during the voyage, and until after arrival at Jullunder.

Some time before embarkation, and with that portion of the regiment at the Curragh, several cases of measles occurred amongst the children; and the Surgeon, fearing if any cases of this disease were embarked, that it might become epidemic on board ship, recommended that the women and children should be left behind; and the recommendation was followed [illegible] that no [illegible] member of the same family should accompany the regiment. No cases of measles, therefore, were actually embarked; but five days after sailing one case occurred, and the disease spread rapidly amongst the children, and a few cases occurred also amongst the officers and men.

During the [illegible] the greatest care was bestowed on the cleanliness, ventilation, and fumigation also, of those parts of the ships occupied by the families.

There was no crowding of the married people on board; on the contrary, the accommodation was good; and there were [illegible] and the Surgeon states that they were well and [illegible] fed.

Besides measles, whooping-cough, bronchitis, and diarrhœa became prevalent amongst the children; and before the termination of the voyage "the [illegible] became [illegible] a painful degree." Under this complication of disease, we have seen that the regiment, including men, women, and children, embarked free from disease apparently; that during the voyage the men continued healthy, and the children alone sickened and suffered; and on arrival at Bombay even, early in the spring, the men were reported to be still healthy.

From Bombay the regiment proceeded in the transports to Kurrachee in the month of March; from thence up the Indus to Mooltan [illegible] river flats towed by steamers, and from Mooltan to Jullunder, chiefly by rail.

The regiment was divided into wings on the passage up the river, and in the head-quarters wing diarrhœa broke out amongst the men almost immediately after leaving Kotree. With this wing (head-quarters) two-thirds of the recruits and the greater number of the women and children were sent.

The Surgeon of the regiment thought that this outbreak of [illegible] might have been caused by the use of the river water, before it was allowed to deposit its mud or other impurities possibly contained in it; and also to the want of alum to purify the water. He thought that such was almost certainly the case, from the fact of the left wing of the regiment having been free from bowel complaint, though they made use of the same river water, but purified by alum; and, further, from the disappearance of diarrhœa amongst the men of the head-quarters wing after a supply of alum had been procured and mixed with the water.

On the passage up the river, men, women, and children were much crowded in the flats—so I was informed by the Surgeon and other officers of the regiment, though, from a memorandum attached to my original report by Major-General Harris, commanding the Sirhind Division at the time, it would appear that the accommodation was in excess of regulation. However that may have been, the men occupied the decks of the flats day and night, protected only by an awning, while the women and children were placed below, and packed closely together; but every effort was made to keep this space clean and well ventilated.

At the season of the year when the 92nd came up the river, [illegible] the month of March—the heat by day had become considerable, and the sun must have beat down with great power on men who had nothing but a thin awning to protect them; and as day closed and night set in, these men, still protected by the awning only, must have felt keenly the cold chilly night breeze as it swept along the river. In addition to this exposure to sudden changes of temperature, the men were [illegible] in that state until the sun dried their things, and warmed their bodies on the following morning.

At the same time that diarrhœa prevailed amongst the men, [illegible] and as fever [illegible] became frequent, bowel complaints became less so. But the women and children also suffered from diarrhœa, caused (as the Surgeon thought) in the former by the use of river water. The younger children, however, and some even of those at the breast, suffered from bowel complaint, the result of, or consequent upon, measles. These children, therefore, did not suffer from the use of river water, or at least their complaints were not caused, in the first instance, by it, for they had all been ailing and suffering from diarrhœa before arrival at Kurrachee.

[illegible] April the regiment reached its destination, and [illegible]

and almost immediately after arrival there, diarrhœa again broke out with greater severity than before, no class escaping, but the young soldiers suffered most. This outbreak was at first attributed to the large draughts of cold water which the men drunk when over-heated.

The barracks at Jullunder did not afford sufficient accomodation for the whole regiment; detachments were, therefore sent to Phillour and Govind Ghur, and a party of 70 men, consisting of the youngest and most delicate, was sent to the convalescent depôt at Kussowlie; but even after these reductions the regiment was crowded in barracks, and the superficial space per man during the whole hot season was only about 67 feet. During the latter part of April and beginning of May, diarrhœa amongst the men gradually became less, but many simple fever cases began to flock into hospital, especially at Jullunder; and as the month wore on the cases of fever admitted assumed a graver character. On the 24th of May a case of typohoid fever was reported—the first at head-quarters; and very shortly afterwards "many of the cases of what, on admission to hospital, appeared to be simple fever, assumed, or showed a great tendency to assume, the *typhoid* character."

I could not ascertain the exact number of such cases, as only those that were decidedly cases of *typhoid fever* were recorded; but in his letters and reports the Surgeon of the regiment remarked that "numbers showed a tendency to run into a *typhoid state*."

Previously to this, however, two cases of typhoid fever (a man and a woman) occurred in the detachment of the regiment at Phillour, and early in May two cases of the same fever occurred in the detachment at Kussowlie. These two last-mentioned cases I saw several times, as I happened to be making a spring inspection of the hill stations at the time.

Up to August 2nd there were 247 admissions to hospital for fever alone, and of these 56 were lads under 20 years of age, 123 over 20 but under 25 years of age. Of the 247 cases, 12 were distinctly *typhoid*, and reported as such,—5 of them under 20 years of age, 6 over 20, and 1 over 25 years of age. Of these 12 cases, 7 proved fatal, and of these fatal cases one was 15, two were 18, one was 19, two were 20, and one was 23 years of age.

From date of embarkation up to 2nd August there were five deaths amongst the women, from common fever, from typhoid fever, from puerperal fever, and from heat apoplexy; and in the same period there occurred *thirty-nine* deaths amongst the children, from measles, from diarrhœa, and exhaustion, and *three* from *common fever*.

Besides 247 admissions amongst the men for fever, there were 86 admissions for diarrhœa and dysentery after arrival at Jullunder and up to August 2nd,—that is to say, within three months and a half; and all the men admitted under these two diseases were between 18 and 22 years of age. The number 86 refers to men only, and does not include any cases which occurred during the passage up the river, for none of these were admitted to hospitals, as the accommodation for sick on board the flats was very limited; and even during several weeks after arrival at Jullunder, cases of bowel complaint (slight ones, of course) were not taken into hospital, so that it is impossible to ascertain to what extent bowel complaint prevailed; but from the fact of the Surgeon having especially alluded in his reports to the prevalence of diarrhœa on the passage up the Indus, and again after arrival at Jullunder, we may conclude that the complaint prevailed to an unusual or considerable extent, and at the same time we may conclude that the 86 admissions were severe cases.

During the same period (three and a half months), out of a strength of 79 men at Phillour, there were 30 admissions to hospital for fever, and 5 for diarrhœa, and only *one* of the thirty admissions was a case of *typhoid fever*.*

At Kussowlie, out of a strength of 80 men, there were in the same period only six admissions for fever, and two of these were well-marked cases of *typhoid enteric fever*, and only four cases of bowel complaint, one of which was a case of dysentery contracted on the way up from Jullunder to Kussowlie. The two cases of enteric fever in this party were boys 19 years of age.

Altogether, including men, women, and children, there were 17 decided and recorded cases of typhoid fever in the regiment, not confined to one, but reported from three different portions of the regiment at long distances from each other, but all occurring about the same time, though in the distant detachments first. The strength at Jullunder was 600, and out of this number there were 333 admissions to hospital for two diseases only within three and a half months,—that is to say, upwards of half the strength suffered from fever and diarrhœa in this short period. Of the 333 admissions, 83 were boys under 20 years of age, 166 lads over 20 years of age, and only 84 above 25 years of age. Of the 15 recorded cases of typhoid fever amongst the men, 14 were under 20 years of age, 9 were English, 2 Irish, and 5 Scotch.

From these figures it will be observed that the young men were the chief sufferers, and that typhoid fever was more fatal amongst the English recruits than any other class.

The following is a description of the typhoid fever as furnished me by the Surgeon of the regiment:—

"The cases of typhoid fever which have occurred were all young men, only one being over 21 years of age. In these the symptoms of ordinary fever merged into those of low typhoid fever, the typhoid symptoms setting in when the patients were apparently recovering. The symptoms were low muttering delirium and a tendency to coma; eyes sunk in; breathing oppressed; pulse small and quick; teeth covered with sordes; tongue brown, dry, and glazed; restless twitchings of face and hands; bowels bound (?) at first, except in a few cases, were afterwards moved involuntarily; urine thick and high-coloured, and in a few cases entirely suppressed (?); a rose-coloured eruption was apparent in three cases, but obscured by prickly heat. There was hæmorrhage from the nose in three cases and from the bowels in two, and there was deafness in several cases.

"In three out of the *seven* fatal cases, enlargement of Peyer's glands was found, and in all the mucous membrane of the stomach and intestines presented patches of ulceration in a greater or less degree. In one case no ulceration could be detected, though before death the patient had passed a very large quantity of blood. In one case an abscess was found in the liver; and in another, peritonitis set in shortly before death."

In the two cases seen by myself at Kussowlie in May, 1868, the rose-coloured spots on the abdomen were distinctly seen; and in both of these cases, and in another lately under treatment at the same station, there was a remarkably livid, dusky appearance about the face—a symptom not noticed, or at least not mentioned, by the Surgeon of the regiment, or by the other Medical Officers.

I attach detailed statements of these three cases, and the *post-mortem* appearances in one which ended fatally only a few days ago.†

It may be worthy of remark that the two cases treated at Kussowlie in 1868 were both admitted with fever of the intermittent type, which on the sixth day after admission became

* I do not include the sickness I witnessed when on board the flats.

† Will appear in the next number.—Ed. *I. M. G.*

[illegible] typoid. The [illegible] Kussowlee this year [illegible] fever [illegible] been so short a time in India; but this fact may form the subject of future remarks.

From the description of the fever given by the Surgeon, and [illegible] by myself, I [illegible] that the seventeen recorded cases were severe attacks of typhoid *enteric fever*: but I am by no means satisfied that those seventeen were the only cases of this fever in the regiment; indeed, I am of opinion that the [illegible] typhoid were mild but still genuine cases of *typhoid enteric fever*, and that this type of fever was at that time epidemic in the regiment.

I shall now endeavour to explain how this *typhoid enteric fever* may have been originated in the regiment.

The [illegible] may be looked on as accidental, but still it shows that the regiment, or at least numbers of it, may have been exposed to the poison of this disease. No other case, however, having occurred in the corps until after an interval of three months, may induce us to believe that none of the men who embarked had already come under the influence of the disease. We have seen that measles had appeared amongst the children while the regiment was at the Curragh, but that no child suffering from the disease or any member of a family in which this disease had made its appearance, was allowed to embark, and yet that, in a few days after sailing from Cork, measles again broke out amongst the children and became epidemic; and also that at the same time whooping-cough, bronchitis, and diarrhœa became prevalent also.

All the children who embarked were apparently in good health, but in a few days after sailing were attacked by measles, &c.; they must therefore have left Ireland laboring under the poison of this disease.

In the same way it is quite possible that some, may many, of the men, and particularly the young recruits who joined just before embarkation, may have imbibed the poison of enteric fever while in Ireland, or even before they joined the regiment, and that the disease did not come into active operation until the men had been exposed to the exhausting climate of India. Several circumstances, though remote, are in favor of this opinion, —*viz.*, the facts of one case having occurred at Cork immediately before embarkation; of the fever having first appeared, shortly [illegible] amongst the young recruits who had joined the regiment shortly before it left Ireland; and of the disease having been confined almost entirely to these recruits and to the youngest soldiers.

I will not, however, insist upon this opinion, as it is barely supported by more than supposition, but shall endeavour to explain the possible origin of the disease otherwise.

On board the transports the families were placed in a part of the ship by themselves. They had their own sleeping-berths, bath-rooms, and water-closets; and I am informed that the ventilation of the ships in every part was *admirable*. As soon as measles, &c., appeared, the families were put into quarantine, were confined to their own parts of the ship; and the soldiers, except the husbands and the sentries, were excluded from these parts of the vessels. But however well ventilated ships may be, and however clean sleeping-berths, bath-rooms, and water-closets may be kept, I do not believe it possible to preserve the air between decks pure and fresh, especially in a transport full [illegible] and however [illegible] and the part of the ship occupied by [illegible] and [illegible], cannot, of course, be communicated from one person to another, or by the medium of the air [illegible] to the case of persons [illegible] communicated to and from [illegible]. Such was the case in the present instance, for though the sufferers from measles and their attendants were confined to their own part of the ship, the disease prevailing amongst them extended to both officers and men.

[illegible] the poison of measles was not swept from between decks by means of the admirable ventilation, we may conclude that the air between decks was rendered still further impure by emanations from the bodies of sick children, by effluvia from diarrhœal discharges and from the water-closets used by children suffering from diarrhœa, and very probably from their dirty linen and clothes also; for at sea these articles cannot be washed every day, and the children of soldiers have not generally many changes of apparel.

Under such circumstances, therefore, it is more than probable that the conditions were originated on board these ships, under which *typhoid enteric fever* was likely to be developed.

As already stated, during the passage up the Indus the women and children were placed below, and the men occupied the open decks above them at the time the young children were still suffering from diarrhœa, which complaint extended to the elder children and women, and became prevalent amongst the men also. True, the prevalence of diarrhœa amongst the men was attributed to the use of the Indus water, and the second appearance of the complaint in the regiment, after arrival in Jullunder, more universal than the first, was supposed to have been caused by the men drinking too freely and often of cold water when they were heated. I think, however, that the use of Indus water had little if anything to do with the appearance of diarrhœa amongst the men, and that exposure on the decks of the flats, without proper covering, to the sudden changes of temperature and weather, was a much more probable cause; and, further, the children who had been suffering from measles, whooping-cough, and diarrhœa, and who with their mothers had been carefully separated from the regiment on board ship, were, on their arrival at Kotree, still suffering from diarrhœa, put into the same flats, women and children all crowded together in the ill-ventilated space between decks of the flats, while the soldiers occupied the decks immediately above them. This, I think, was a much more probable cause of diarrhœa amongst the men than either of the others, for all were suffering [illegible] those who drank river water and those who did not, and those who were exposed on deck and those who were sheltered between decks;—and here again on board these crowded flats, where all classes were suffering from diarrhœa, were present the conditions under which *enteric fever* might have been developed.

Taking what I have stated into consideration, and knowing that neither fever nor bowel complaint was prevalent in the European or Native Regiment, or amongst the prisoners in the civil jail, or amongst the civil population in and around the city of Jullunder, immediately before or since the arrival of this regiment in that station, I think I may conclude that this typhoid enteric fever originated within the regiment itself, and that it followed an outbreak of diarrhœa which commenced on board ship amongst the young children, and extended on board the crowded river flats to the elder children and women, and lastly to the men, and to the young men especially, amongst whom bowel complaint and fever have been most prevalent, and to which class typhoid enteric fever [illegible] almost exclusively confined.

Several unfavorable circumstances were connected with this regiment on its arrival in India: —

1*st*.—It was to so great an extent composed of boys or growing lads.

2*nd*.—It arrived in the country at the beginning of the hot season.

There were 239 boys or growing lads in the corps on its arrival at Jullunder; and as it is an established fact that European children who remain in India grow up physically weak, so we may expect and believe that undeveloped lads or boys coming to India to serve as soldiers will never, even if they survive, grow into well-developed or vigorous men.

This regiment, then, composed of boys to such an unusual extent, arrived in India at the beginning of the hot season, was thrust suddenly into a climate inimcal to the European constitution at the very worst season of the year; for the men, being children of a cold, damp climate, were suddenly exposed to the discomforts and dangers of intense dry heat, and naturally the weak undeveloped lads could not withstand its debilitating influence. The boys or young lads—in fact, the least vigorous class in this regiment—have been the chief sufferers, and the following figures will show the amount of sickness and mortality for five months after arrival:—Men, 721 admissions, 19 deaths; women, 89 admissions, 5 deaths; children, 127 admissions, 39 deaths.

I believe it is acknowledged to be a fact that all regiments suffer more during the first than during any subsequent year of service in India, except when epidemic disease breaks out in a corps. I cannot show, have not the means now of showing, this in figures, but speak from memory and experience, having landed with a regiment in 1857, and remained with it till 1867. During the first hot season of our service in the country, sickness and mortality were very great—greater by far than during any subsequent year, except 1862, when cholera swept off nearly one hundred of our numbers.

It is a question of the greatest importance whether this sickness and mortality in regiments on first arrival might not be avoided. I think they might, and the remedy would be to send all regiments to the *hills* for the first two years of service in the country.

My experience of the value of the hills is this: "Go thither to *keep* well, not to *get* well." —*Communicated by the Inspector-General of Hospitals, H. M.'s B. Forces.*

HYPODERMIC INJECTION OF LIQUOR AMMONIÆ IN CHOLERA.

By Surgeon A. G. Young *60th Royal Rifles, Bellary.*

For the last month or six weeks, cholera has been hovering about the towns and villages in the district round Bellary. A considerable number of cases have occurred in the latter town, and many native travellers have suffered from choleraic seizures, after their arrival from infected villages.

On its first appearance at Bellary, measures were adopted to check its spread amongst the natives, and its extension to the cantonment, where two batteries of Royal Artillery, one European and three Native Regiments, are stationed. By the careful administration of sanitary laws, these desirable objects have been all but attained, as evidenced by the great diminution in the seizures among the bazaar inhabitants, and the non-existence of the disease, in an epidemic form, in the garrison.

On the afternoon of the 19th June, three men and several children of the battalion under my charge were brought to hospital, suffering from severe choleraic diarrhœa. The disease appeared so suddenly and almost simultaneously in all of them, that a suspicion of some more tangible origin than "atmospheric causes" at once arose. But a careful scrutiny, and the simple fact that these cases occurred in parts of the barracks so widely separated from each other that they could not possibly be ascribed to a similarity of dietetic errors or accidents, convinced me that the dreaded enemy was threatening an invasion. About 3 p. m., half an hour after these cases were admitted, and while I was watching them, another man was brought in, from an entirely different set of barracks, with unmistakable cholera. He had all the characteristic symptoms of that worst form of the disease, where coma supervenes so rapidly, and purging and vomiting are slight. From the first, the animal heat was excessively low, pulse rapid and very small, the countenance shrunken and anxious; there were lividity of the lips and tongue, dulness of intellect, constant cramps and choleraic voice. Diffusible stimuli, frictions, hot turpentine stupes, and hot-water bottles, freely applied, were at once resorted to. Dilute sulphuric acid was given freely as a drink, mixed with water, and arrowroot and brandy in small quantities. Two copious rice-water stools were passed within the first hour, and similar matter was once ejected from the stomach. After this the symptoms, with the exception of purging and vomiting, rapidly increased in severity, and it became too evident that coma was rapidly supervening. Three hours after the commencement of the attack the patient was almost insensible; he could only be roused by a good shake, and then only replied by signs—articulation was impossible. When left alone he at once relapsed into a comatose condition, with eyes fixed, glassy, and totally devoid of intelligence. The pulse could just be felt at the wrist as a thin, faint wave, without distinct tonicity. The skin was cold and clammy, the features sunk, lips almost blue, and breath cold. I now determined on using the hypodermic injection of liquor ammoniæ. The nozzle of the syringe was inserted under the skin on the back of the left hand, the patient remaining perfectly quiescent, and about eight minims of the ordinary dilute liquor ammoniæ were injected slowly. The effect was magical. A few seconds after the injection, a slight twitching of the muscles of the forearm and contraction of the fingers were observed, and the man slowly turned his head to the left, and regarded the wounded hand, with a dull, vacant look, certainly, but one that also inspired hope in those who witnessed it. There was no intelligence in the look; but the mere fact that it was directed towards the seat of injury and pain shewed that consciousness, however feeble, was not altogether extinct. I carefully watched and noted (20 minutes after the injection) the gradually returning strength of the arterial wave, and with it a perceptible increase of temperature. The eyes slowly regained their intelligence, and the shrivelling of the countenance and lividity of the lips began to disappear.

Arrowroot and brandy in small quantities were now given at short intervals, and hot-water bottles were kept about his body and limbs. At 9 p. m., three hours after the injection, the pulse was soft and moderately full, heat of skin re-established, except in the feet and legs; but even they had lost their extreme coldness; face and lips natural, and the respiration free and regular. Drowsiness existed to a certain extent, but he could be readily roused, and he spoke with a thick utterance. No more vomiting or purging; and he has not voided urine since admission. There is a small dark patch on the back of the hand, where the ammoniæ was injected. Ordered a little arrowroot and brandy, a blister to nape of neck, and five grains of calomel with one eighth grain of opium:

No other case of cholera has occurred in my charge, and I have had no further opportunity of testing the efficacy of the plan of treatment which was, in this solitary instance, followed by such signal success. I send you these rough notes, in the hope that their publication may induce some one or more less [illegible] to try the experiment on a more extended scale.

CARBOLIC ACID IN SMALL-POX.

By C. R. Francis, M.B.,

[illegible]

In the *Lancet* of January 23rd, 1864, appeared a letter from Mr. Keith, of Normanby, eulogizing the therapeutical effects of *carbolic acid* in the treatment of scarlatina, measles, and *small-pox*. The writer observed of the last-named as Mr. Keith's experience, as follows :—

1. It is a powerful sudorific.

2. It lowers the pulse so rapidly that the latter will fall from 12[illegible] to 30 in twenty-four hours, the skin becoming cool and moist with subsidence of fever.

3. The tongue will soon become clean and moist, and the sore throat, in scarlatina, will be much diminished.

4. The [illegible]

5. He believes the [illegible] a patient through [illegible] other treatment that he is aware of.

Attracted by this letter, Dr. D. McEwen, an intelligent Assistant Surgeon [illegible] of the Artillery at Sanger, determined to make use of the agent [illegible] tion in the *Indian Medical Gazette*, with the particulars of a case of small-pox in an officer of the Royal Artillery, where the physiological effect attributed to carbolic acid by Mr. Keith [illegible]

The patient was a young officer, aged 28, suffering, before being attacked by small-pox, from chronic scurvy. He had [illegible] previously. His gums were still very tender, and apt to bleed on pressure. He had not been vaccinated apparently—at least he [illegible] same time. He was [illegible] by the [illegible]

The [illegible] and the pulse was quick and [illegible] On the [illegible] [illegible] [illegible] The [illegible] [illegible] [illegible]

CASES FROM PRACTICE.

CASE OF PROFUSE HÆMORRHAGE OF WHICH THE CAUSE WAS UNCERTAIN.

By W. K. Waller, M.R.C.S., Fel., U.C.

Called to see W. T., stated to be spitting blood. Examination of chest convinced me the hæmorrhage was not from the lungs, yet it had not the character of hæmatemesis. There was a slight cough, which might be accounted for by a slight dulness on percussion beneath the angle of left scapula, and the respiratory murmur here was not perfect; but there was no pulmonary disorganization, no sign of cardiac discord, no previous history of rheumatism, no heat of skin; pulse between 80 and 90, and decidedly not hæmorrhagic in character. No pain except in the left hypochondrium, and in remarking this, the patient with his hand described me greater curvature of the stomach. He stated that he had a peculiar sensation of uneasiness and distension there *before* the blood flowed.

About the 6th day of attendance, being very undecided as to the cause of the hæmorrhage, which continued in spite of treatment (large and repeated doses of gallic acid), I asked Dr. Ewart to see him, he was convinced that the lungs were not the seat of hæmorrhage, and suggested the possibility of the flow arising from the posterior nares. I plugged them accordingly with a sponge soaked in tincture of matico. For thirty-six hours after the plugging, there was no bleeding, and I began to hope that the hæmorrhage had been stopped; but at the end of the time stated, the bleeding returned with great violence. When it had ceased, I removed the plug, which was perfectly unstained. I tried a few doses of acetate of lead, but this had no better effect than the gallic acid. I had given turpentine, but a very few doses produced bloody urine, and it had to be given up. The bleeding having lasted now many days, and the patient becoming very blanched, and his pulse showing signs of irritability, it was determined, about the 14th day of treatment, to give large and frequent doses of the tincture of sesqui-chloride of iron. He accordingly took 40 minims every 4 hours from the 18th of April, until the 1st of May, when he left for Europe in the French steamer; there had been no return of hæmorrhage. The iron was continued all this time. During the whole illness, he was freely supplied with ice, which he swallowed in large quantities. Ice was also supplied externally to the left hypochondrum. Beef-tea and milk were given freely by the mouth. We tried the administration of nutrient enemata, but he invariably got sick after them, and they had to be discontinued. During the whole illness the bowels were rather constipated; there was never a trace of blood in the stools.

Where did the blood come from? Certainly not from the lungs. I think as certainly not from the stomach. Aneurism was considered, but there were no signs by which it could be detected. I always fancied the œsophagus the seat of disease, but of what nature I am not prepared to say, in the absence of all pain in the course of the channel, and perfect freedom from dysphagia. It remains a mystery to me, but it is a fact that for nineteen days this man discharged by the mouth several pints of blood; I saw him myself fill a China-ware spittoon holding at least a pint, and then about ½ of an ordinary wash-hand basin; and quantities like this were of daily occurrence. He was so reduced and anœmic, that we expected his death *must* take place, yet apparently he recovered, and left Calcutta after 12 to 14 days of progressive improvement, to all appearance likely to do well.

If the course and origin of the malady is clouded with mystery, the result may suggest the advisability of persistence in treatment, even in such desperate cases, to the last.

ABSTRACT OF A CASE OF ENTERIC FEVER.

By Surgeon A. Ross, M.D.,

92nd Gordon Highlanders.

Private William Innes, aged 27, total service 9 years, service in India 1½ year, a small man, of spare habit, light complexion, lymphatic temperament, somewhat dull appearance, and steady habits, was admitted to Hospital, on the 23rd May, suffering from continued fever, from which he so far recovered that I had recommended him for two months' furlough to Kussowlie with the view of regaining his strength, and I feel he should have a return of fever, a sharp attack of which I trust would carry him off.

On the evening of the 29th May, he was up and looking well. On the morning of the 30th, he had a return of fever of a low type, which rapidly merged into decided typhoid. He had a strong tendency to coma; eyelids drooping, and raised sluggishly when roused; inclined to deafness; lips and teeth covered with sordes, tongue dry and glazed, and resembling a piece of polished mahogany; pulse weak, thready, and rapid, sometimes fluttering; he was occasionally delirious, muttered low, and had twitchings of the hands; breathing hurried and somewhat oppressed, a distinct rose-coloured eruption on the abdomen; no pain on pressure over the liver or bowels. At first there was a tendency to suppression of urine, which afterwards was passed incontinently; bowels inclined to looseness; stools sometimes bilious, sometimes brown and watery, and without blood.

His treatment embraced the shaving of the head, which was blistered and dressed with Ung. Hyd. and Ung. Sabinæ; the cold douche; counter-irritants over the chest and liver, and internally, tonics, diffusible stimulants, diuretics, &c., accompanied with wine, beef tea, &c.

He died at 10 o'clock a.m., on the 2nd of June.

Post Mortem Appearances, five hours after Death.

External appearances.—Body badly developed, anæmic, and small posterior conjestion with imperfect rigor mortis.

Brain.—Small, weighed 2lb 10 ozs., the veins on the surface conjested, as also the substance. Ventricles contained about 3i of fluid, and from the base of the organ about 2 oz. of clear fluid escaped. The sinuses were not conjested, but the blood that they contained seemed extremely thin and dark.

Heart.—Small, pale, but firm in substance, weighed 9 ozs., contained blood of the same color and consistency found in the sinuses of the brain; otherwise organ normal.

Lungs.—Emphysematous; posteriorly congested. They weighed when taken together only 1lb 7 ozs.

Spleen.—Large and nodulated; of a dark chocolate color, and feeling soft to the touch. It weighed 14½ ozs.

Kidneys.—Right slightly congested; they weighed, taken together, 11 ozs.

Liver.—Pale in substance. Iodine reaction showing it to be slightly albumendid; weighed 3lbs. 13 ozs.

Stomach and Intestines.—Stomach slightly congested at the lower part of the jejunum. Here and there spots representing loss of tissue, existed, and on examination of the next portion of the intestine there was found unmistakeable ulceration of the peyer glands, one large, 1½ inch by one inch in size (so far advanced as to be on the point of perforation) and towards the ileo coecal valve there were numerous points of ulceration, but, beyond this, not a single speck of congestion. The large intestines throughout were perfectly free from disease.—*Communicated by Deputy Inspector-General of Hospitals, W. Moore, C.B.*

CALCUTTA NATIVE HOSPITAL.

EXCISION OF THE ELBOW; RECOVERY UNDER THE CARE OF DR. BAILLIE.

Reported by Mr. J. Hinder.

Peerun, a healthy native woman, aged 25, by occupation an ayah, was brought to the Hospital by the Police on the 6th October, 1868, having been murderously assailed by her paramour. She was insensible from loss of blood, having received no less than seventeen wounds (some of them very severe) inflicted with a butcher's knife, the principal cut, about 3 inches long, being over the back of the left elbow-joint, which it fully laid open, exposing the condyles of the humerus, the olecranon, and the head and neck of the radius. An attempt to save the limb having been determined upon, the wound was enlarged, and the ends of the three bones sawn off by means of the chain-saw. Not an artery required to be tied or twisted, nor were any nerves interfered with. A few sutures brought the wound together, which was covered by a pledget of lint dipped in carbolic oil (1 part to 8). The subsequent treatment was that usually employed in similar cases. No bad symptoms followed, and the patient left the Hospital on the 20th March, 1869, with a fair and flexible false joint.

AMPUTATION OF LEG FOR CARIES: RECOVERY UNDER THE CARE OF DR. BALLIE

[illegible]

almost pulpy, was freely rubbed over with Calvert's pure crystalized carbolic acid, and the flaps brought into place, the [illegible] healed by adhesion, the middle portion only discharging a little; this was dressed with carbolic oil, and within the month the wound was closed, and the patient left the Hospital [illegible]

HERPES FRONTALIS

By Assistant Surgeon J. M. Macfarlane

Presidency General Hospital

This skin disease has lately been investigated by Messrs. [illegible] and will be found described in the Ophthalmic Hospital Reports, Vol. VI., Part I.

Mr. [illegible] has met with twenty-eight cases, and [illegible] is supported by the following cases which have occurred during the last month at the General Hospital. Mr. Macfarlane states in the report [illegible] that the [illegible] is unaffected [illegible] the disease is limited [illegible] it must [illegible]

John Hallies, cook, aged 50, states that for three months [illegible] has suffered from pain in the right side of his forehead. His right eye was not influenced by it, and the eruption did not go down the side of his nose. The pain in the [illegible] weeks or less.

There are numerous confluent scars extending from the foot of the [illegible] forehead, they reach just up to the middle line on the forehead, but [illegible] the middle third of the [illegible] the temple, near to the roots of the hair.

CASE OF DISLOCATION OF THE PATELLA INWARDS

By [illegible]

[illegible] dog-cart on the 12th instant; he at once complained of a rending [illegible] in a vice.

I was fortunately at hand, and on examining the knee, found [illegible] extremely everted, and raised from the ground; patient vomiting [illegible]

[illegible]

[illegible] twelve leeches.

[illegible] and discoloured. A back splint and cold lotions are being used. I am induced, from seeing in Erichsen's Surgery that there is but one such case recorded, to send you the above particulars.

A CASE OF SHOULDER PRESENTATION; SPONTANEOUS EVOLUTION

By Civil Assistant Surgeon [illegible]

Officiating Health Officer, Howrah, Bengal

When [illegible] the mother's pelvis, with the head in one iliac fossa, and the breech in the other. Delivery is impossible while the child [illegible] the position of the child should become changed before it can be expelled. In the majority of cases, we are called upon to bring about this change; but in some cases *Nature* herself effects this, without any assistance from our hands. During uterine contractions under favourable circumstances, the abnormal [illegible] doubled up, and so expelled; the breech being the first to born.

[illegible] where this occurrence is perhaps more frequent than in Europe, [illegible] in the Midwifery Wards of the Medical College Hospital, will be found recording [illegible]

[illegible] to the full term of her first pregnancy. Labor pains commenced [illegible] March), membranes ruptured at 9 p. m. The pains continued steady, and at 1 a. m. next morning an arm protruded from the vulva. [illegible] endeavoured to deliver the child by traction at the arm, but could not succeed. The humerus was fractured at about its middle.

On [illegible] the pains were moderate; pains were coming every 15 minutes or so, but were not strong; pulse 120; fœtal heart's sounds not audible; right arm of the child was hanging out of the vulva, [illegible] was presenting, and the child was in the anterio position, with the head towards the right side of the mother; the shoulder was very low down, and so firmly jammed up behind the pubes, that the examining finger could not be made to [illegible]. I [illegible] necessary, and then the [illegible] physician of the Hospital was sent for. Unfortunately, I was [illegible] this short interval, I found, to my surprise, the child was being expelled. The [illegible] were I [illegible] head of the child having been expelled while I was by her side.

The child was still-born. Its right arm, shoulder, and the right side of the posterior aspect of the chest, were discoloured, the discolouration extending a little beyond the mesian line towards the left. There was also an ecchymosed mark, along [illegible] inch broad at its widest part; the right humerus was fractured [illegible] before admission; the neck was curiously elongated.

Weight of the child	... ...	2lbs. 10½ oz.
" [illegible]	...	[illegible]
Length of the child	... ...	16 inches.
" " cord	... ...	22 "
[illegible]	...	[illegible]
[illegible]	...	[illegible]
Circumference round the shoulders	...	9½ "
[illegible]	...	[illegible]

There was slight uterine pain for two days, after which it disappeared; the uterus was found well contracted, and there was [illegible] On the 17th of March, [illegible] days after delivery, she complained of [illegible]

the uterine region: pulse 120; breasts painful. In a few days, however, uterine tenderness disappeared, and breasts became normal, but the pulse and temperature kept up a little higher than usual during the whole time she was in the Hospital.

On the 22nd, she left the Hospital at her own request.

OXALURIA, AND A CASE OF ALBUMINARIA.

By Assistant Surgeon F. W. DeFabeck,
Dodge Tenguha Force.

(Extracted from Annual Regimental Report.)

My record of chemical urinary examination supplies me with notes of an observation of the characters of the usually called "envelope" crystals in oxaluria. Examining a specimen of such deposit under the microscope, I observed a large epithelial cast filled with crystals of oxalate, and oxaluate of lime, and portions of uric acid crystals. By carefully manipulating the upper glass, I succeeded in rotating this tube, which thus had as the appearance of a transparent cylinder, with the crystals adhering to its inner surface. The exact shape of the different crystals was thus made distinctly apparent. There is now no doubt on my mind that the oxaluate crystals are in the form of an oval disc, depressed to the centre on both sides, having a longitudinal section as figured at A in the margin, from which they derive the dumb-bell appearance. Some of these crystals are double as at B, and sometimes when seen on edge appear like a perfect cross as at C, who se edge has the appearance shown at D.



This same record illustrates me with details of a case, exhibiting in addition to the ordinary phenomena of albuminaria in a very high degree, others which are sufficiently interesting for description here. The case was that of a relative of one of our seposs, of which the notes taken at the time of admission are as follows.

Sapper, Irish Line, aged about 40 years, admitted November 25th, 1868. Complained first three years ago. Attributes his complaint to the carrying of a heavy weight of Kurbee one day in the hot weather. Felt pain in his stomach after this. The swelling in the abdomen and legs is only of about a month's standing. Has felt pain in the loins from the first, gradually increasing in severity. Has noticed nothing particular about his urine, but a slight increase in quantity.

There is no diarrhœa, but rather habitual constipation. Complains much of dyspeptic symptoms, especially of flatulence after eating. No headache. Feels much debilitated.

There is slight tumefaction of the abdomen, and œdema of the legs, from below the knees downwards, sometimes of the hands, and also of the face. Has no appetite and does not sleep well. There is no abnormality in the action of the heart or lungs. The latter act but feebly. The hepatic dulness is removed very much to the right side. The ventral tympanitis extends over epigastric and both hypochondriac regions. Splenic dulness begins in the seventh intercostal space, and is merged in that of fluid accumulation in the abdomen. Hepatic dulness begins in the sixth intercostal space, and is similarly merged below. Pulmonary percussion sound does not extend more than two inches from the anterior margins of the scapulæ. There is a sense of tumefaction in the loins with dull pain. There is also dull pain on pressure in hypogastric region. There is slight œdema of the abdominal walls, but no complete kind of scrotal œdema.

He was for five days under observation, after which period, disgusted, I imagine, at not finding himself cured *instanter*, he returned to his village.

The observations of the urine were as follows:—specific gravity ranging from 1.005 to 1,010. Almost neutral but slightly acid. Very pale, slightly turbid, depositing a little white sediment. Very densely albuminous. The sediment under the microscope exhibited numerous pus-cells in a greater or less degree of disintegration, renal and vesical epithelium, and granular casts, in which small oil globules are numerously distributed. Agitation of the urine with ether proved the presence of much fatty matter. So dense indeed was the stratum of fatty extract thus formed that the tube could be inverted without the fluid escaping. In 100 grains of urine it was found that there were 2 of fatty extract and 2 of albumen. On addition of colourless nitric acid to heated urine, the precipitate became green and the fluid amber coloured. On adding nitric acid to cold urine, the fluid gradually assumed a green colour, and on the upper stratum, upon the addition of ammonia, a yellow one below. A portion of the sediment becomes green, another yellow, this latter exhibiting a peculiar tenacity to the sides of the glass.

These bromatic phenomena are not produced in the urine filtered after agitation with ether, nor with the filtrate. They are, therefore, due to the action of the nitric acid upon one or other of the chemical components of the fatty matter while in a state of solution.

It is very much to be regretted that opportunities were denied me of pursuing my observations on this case; but it is only one of hundreds which must occur to every practitioner in India, and dishearten him in his practice amongst natives.

SEVERE INJURY TO THE WRIST JOINTS. RECOVERY.

By Surgeon G. K. Poole, M. D.,
18th Bengal Cavalry.

An Afreedie thief was caught by some villagers in the act of housebreaking, and summarily dealt with as follows, and afterwards sent in by the police for treatment in the civil station. The right hand was severed from the forearm just above the wrist joint, apparently by a single blow from a sword. Radius and ulna irregularly cut through and amputation higher up rendered essential; the left wrist joint was opened, the whole of the flexor tendons, with the radial and ulnar arteries divided, and the dorsum of the hand drawn back by the extension, so as nearly to touch the forearm.

The right forearm was amputated at its middle third by the circular method, the three arteries were respectively drawn out of their sheaths by Dr. Keiller, R. A., who kindly assisted me, held at a short distance from their cut ends, which were then seized and firmly twisted for some seconds, so that a kind of knot was formed between the portion of the artery held and the end twisted; the proceeding was most effectual in sealing the mouths of the bleeding vessels. The cut surface was then sponged over with a solution of carbolic acid 3j to 3x the edges brought together with wire sutures, and no dressing whatever applied; the stump was simply placed in a loosely-fitting muslin bag, which was drawn over and tied so as to keep away flies, &c.; in ten days the wound had perfectly healed, and the man has a capital stump.

The wounds of the left hand required careful adjustment, they were first of all sponged out with the carbolic acid solution, the dislocation reduced, the clots removed from the still oozing vessels, which were treated in the same way as before, except that the superficial palmar branch was secured by a needle passed in and below it, and out on to the surface of the skin, and left there for 12 hours.

The edges of the wounds, as there were two distinct sword cuts, one through the palm, and the other through the wrist joint, were brought together with horse hair and wire sutures, and the fingers bandaged over a roller, a back splint put on, and lint dipped in blood applied over all. The hand was placed in a muslin bag with a light roller to keep the splint in position, &c. No bleeding took place, and the man made a rapid recovery; in three weeks' time the wounds were all healed up, the splint was removed, and passive motion of the wrist joint enjoined. There is, however, still a good deal of stiffness about the joint, and partial anchylosis, which, is however, diminishing daily. The man has a very fair use of his hand, which would probably have been removed by any one little experienced in the treatment of these sort of injuries in arteries.

I excuse myself, while to publish this case, seeing that daily the old plan of silken ligature to arteries, silken sutures to wounds, cold-water dressing, pads, and bandages are in use in many hospitals, and have some very strong advocates. In this case, the suppurative process never occurred; the man's sufferings were *nil*, and all the offensive discharge (kept up it may be in many cases by sutures) avoided. The above plan of treatment is quite worth trying, especially by those in charge of native patients; and if others will publish the results of their practice under similar circumstances, there will be good evidence to determine the question of treatment above detailed.

The man in question, I may remark, was under going a sentence of two months' imprisonment on account of his thieving propensities, and was employed at work in the Hospital [illegible] drawing water from the well.

The Indian Medical Gazette.

Acknowledgments.

Notices to Correspondents.

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In the Press.

A TREATISE ON ASIATIC CHOLERA.

BY

C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

MESSRS. WYMAN & CO., Hare Street, Calcutta, will be glad to receive early orders for this work, so as to enable them to procure copies from England, immediately on the issue of the Book from the Press.

PROFESSOR SYME.

To

MY OLD PUPILS IN INDIA.

GENTLEMEN,—The favourable expression of good feeling contained in the letter which you have addressed to me, and which you have subscribed so numerously, is very gratifying to my feelings. I am glad to learn that my health is now nearly quite restored, so that I may perhaps still be able to do something for maintaining the honour of the profession and adhering to sound surgical principles.

With sincere thanks and best wishes,

I remain,

MELVILLE HOUSE, 2nd June, 1869. Very truly yours ever, (Sd.) JAMES SYME.

DR. JOHN MURRAY ON CHOLERA. *

(*Concluded.*)

THE Governor-General in Council has caused the thanks of the Government of India to be conveyed to the author of this treatise on cholera in the following terms:—"I am to request that you will convey to Dr Murray the thanks of the Government of India for his able paper, and for the zeal with which he has undertaken the collection and analysis of the opinion of the medical profession in India; and devoted his time, attention, ability, and professional experience to the laborious consideration of a question of such momentous importance to the well-being of all the inhabitants of India, native as well as British. * * * * The Governor-General in Council does not venture to pronounce on the degree of weight and authority which should be attached to it; but, as a careful analysis by a professional man of Dr. Murray's special experience and long study of the disease, the Governor-General in Council is satisfied that its promulgation cannot fail to stimulate all those whose duties call them to combat cholera to an earnest study of its nature and treatment."

Such are the words the Government of India addresses to its oldest medical servant, now the head of the Bengal Medical Department: a fitting position for a man who, throughout his service, has brought zeal, energy, and talent to bear in every work of his profession. To him only and solely are we indebted for the present decrease in the mortality of cholera, his theory of moving troops from their barracks when attacked with cholera having proved so successful: to him we owe a much more extended knowledge of the propriety of opening abscesses of the liver—a practice first introduced by his uncle, for many years the head of the British Medical Department in Madras: to him Agra owes its medical school, and the introduction of a ventilating apparatus into its jail—still the only rooms in Bengal where a constant current of fresh air can be maintained; and in his long tenure of the post of Civil Surgeon there, he earned the friendship of many of the neighbouring chiefs, whose sons and descendants to this day keep up communication with him.

* Note the very able review of this work at page 171.—ED., *I. M. G.*

To end his services with what perhaps we might have commenced. Let us note him as a military officer nearer the commencement of his career.

After the battle of Aliwal, on the 30th January, 1846, in which those who were present can well remember the apparently hopeless state of confusion the army was in, he reduced *his* department to order, and earned this notice from Sir Harry Smith in his despatch written in the field :—

"Owing to the judicious arrangements of Dr. Murray, field-surgeon, every wounded officer and soldier was placed under cover and provided for soon after dark; and for the zeal displayed by this able and persevering medical officer, and to the several regimental surgeons, are the wounded and our country deeply indebted."

If ever officer earned a C.B. for service before the enemy, John Murray was the man; but C.B.'s were not then granted to medical officers. His services then and since would now warrant a higher title, and we still hope that Government will not forget to reward its honest servant, and labourer in war and peace, of 36 years' standing, by a more honourable and lasting token than mere thanks.

ENGLISH TRAINING FOR NATIVE DOCTORS.

We do not think Professors of medical colleges and schools are generally amenable to advice from the outside world, but we would like to put forward this subject for their consideration, and our columns would be gladly open for its correction, if the plan is not practicable.

We would suggest to them to institute an English Class for the teaching of native doctors (hospital assistants as they will eventually be called), so that when they pass into the service of Government, they will not only reap advantages themselves in the increased pay for the accomplishment, but they will be much more useful servants to the State, and to their immediate masters.

At Calcutta, the students in the Military Class of the Medical College have advantages that do not exist elsewhere. They can attend an English school in some of their spare hours, and many of them do so; but the greater number either learn English of their own accord before entering the college, or acquire it after passing their examination. The recent substantial advantages for the acquirement of such knowledge will, no doubt, spur the young hands; and in future we expect very few men of this class will pass into the service from Calcutta without having a fair smattering of the language.

At Agra and Lahore it is different. English is not learned there with the ease and cheapness that it is in Calcutta; at these schools particularly, therefore, we should like to see English introduced in the curriculum of the studies, and enforce passing an examination in it, as a part test of their ability and training before entering the service.

At both these schools, which are still under the old system, and pupils have to pass three years in study, young men enter the school fairly educated and with the acquired art of having learnt something. They are obliged to undergo an examination, and to prove that they are able to read Oordoo fluently, and to write it from dictation; also to be well acquainted with the first four rules of arithmetic—Addition, Subtraction, Multiplication, Division—before they are admitted into the school at all. To give them an hour a day during their school course, for the study of English, would not be a hard burden on them, and the result would be well worthy of the labor.

The teaching might be done very cheaply. There are well-educated men turned out of the first or English Class at each school, who would gladly become masters in that language, for a small emolument.

In future years more time could be spared for this branch of education, perhaps, than at present. There is every probability of the education at these schools being brought under the new system, which lays down that native medical pupils are called so on passing a preliminary examination; that they are then to be attached for two years to a regimental hospital or civil dispensary; and then they are to attend a college and school for two years, from whence they emerge as hospital assistants, after passing the required examination. Pupils will thus come to the schools in future somewhat trained in the rudiments of their future profession, and would be able to give more time to the acquirement of language and to their improvement in it, should they have been studying it previously.

The advantages of the education to these lads need hardly be dwelt on; but it may be as well to show the material boon Government holds out to them as an inducement to learn.

During their course of four years' education, those who possess a certain knowledge of English receive two rupees a month more than the others, while on entering the service an English scholar draws five rupees higher for his first seven years, ten rupees more for his second, and at fourteen years' service and over, the rate is fifteen rupees more than his less educated or useful compeer.

THE MEDICAL SERVICE AND THE NEW FURLOUGH RULES.*

We observe, with much regret, that the new Furlough Rules have been again unfavorably modified with reference to the Medical Service.

Only a short time ago, the medical charge of a regiment was ruled to be not an appointment, and therefore not to be retained by a regimental officer proceeding on furlough. We now learn that the Governor-General in Council, having considered the views expressed by the several local governments and administrations, is of opinion that a medical officer in charge of a civil station should, when proceeding on furlough, retain a lien on some similar appointment, *i. e.*, the charge of a civil station of the same class, or some other civil charge of equal emoluments; but that he should not, as a general rule, have any claim to re-appointment to the same station.

One of the great boons of the new Furlough Regulations was the security apparently given to holders of staff appointments and regimental charges. Under the old rules, when a period of six months' absence involved the forfeiture of appointment, men hesitated to take furlough unless compelled to do so by sickness. The holder of the medical charge of a regiment was unwilling to separate himself from his old corps, or to run the risk of finding himself on return to India condemned to remain for weeks or months on unemployed pay. The Civil Surgeon attached to his varied work, his pet hospital, or his opportunities of emolument, would not leave his appointment, knowing that once

* [illegible] *I. M. G.*

Rules were published, all medical officers, holding civil or other

Secretary of State for India that leave, taken under these rules, would not involve forfeiture of appointment. Some there were,

have been construed, with reference to holders of medical appointments, has robbed them of much of their value.

civil at the decisions of the head of the Government, but these modifications of general rules, to the disadvantage of the Medical Service, must tend to foster discontent within its ranks,

men from entering the Medical Service of Government.

the subject.

The *Lancet* of the 24th of April last has a leading article on the hardship entailed on regimental medical officers by their

springs a recital of all the wrongs the Indian Medical Service

under.

couraging to those who should recruit our ranks, and disastrous

advantages conferred by them were given to the army, of which the service forms part and parcel. We cannot see how it can be maintained that the medical charge of a regiment is not an appointment, or the justice of obliging a medical officer taking

That it should have been thought wise to deprive a civil medical officer proceeding on furlough of his appointment is a

for thinking that such appointments should be permanent, and

consulted, a different decision would have been arrived at. We do not, however, care to join issue on this score. The point on

the army at large has been, by uncalled-for special legislation,

of the service. We throw to the winds as worthless the ruling that the despoiled officer returning from furlough shall have a lien upon an appointment similar in value to that which he has lost. How if there be no appointment of similar value vacant,

old regime, when he might always look for another appointment

THE DRAINAGE AND CONSERVANCY OF CALCUTTA.

adhesion to it; he has evidently, however, been convinced against his will, and he tenderly lingers over what might have been done with the "Dry-earth System"—the present fashion of the

been spent on it.

Dr. Smith's knowledge of the subject and

completion.

In 1855, Mr. Clark, the Civil Engineer who created the town of Hull, pitted his English experience against Indian theory, and

his ideas in June, 1857, by the Government of Bengal; and although

successful.

"The system is throughout one of underground covered

lines from the river to the direction of the Circular Road. Every portion of the entire area of the town will be within 1,000 feet of one of these sewers. With them will communicate the secondary drains throughout the city, and continuous with these again will be the whole system of minor collateral and capillary sewers."

The whole drainage thus arriving at one spot will be conveyed by one large under-ground sewer to silt pits, "whence, during the dry weather, it will be pumped up eleven feet by steam power (in the wet season this lift will be reduced to 0 (zero), when the

into a high level covered sewer, 8,100 feet long, extending to the

is to be found. The outfall will be a constant one, the level of the Salt Lake being from 10 to 17 feet below that of the surface of Calcutta, ... the fall is 14 feet in a distance of 4 miles."

The future water supply of Calcutta is intended to be subservient to the flushing of these sewers, and forms part

give more extended notice to the undertaking, which is

the original scheme, which has subsequently been carried out

The main features of the water supply are these:—

The water is taken from Palta Ghat, about two miles above Barrackpore or eighteen from Calcutta. Here the river water is comparatively pure; the filth poured into the Hooghly at Calcutta is not carried so far up by the tide, and the brackish water

absent. At this point the water is pumped up into reservoirs, where it remains till the muddy particles have subsided; it is then passed through filter beds, and conducted by a 12" cast-iron pipe to Calcutta, where it will be received in reservoirs, and be pumped up from thence under a pressure sufficient to command the top floors of the highest house in the city, passing to every part through iron pipes.

Not only is an efficient water supply thus provided for the dwellings in Calcutta, but the public tanks will be kept filled with clean water, smaller tanks and drinking fountains will be everywhere in use, and street watering will be accomplished by hydrants inserted in the water pipes at distances of 150 yards; the overflow from all of which will assist in flushing the sewers.

One of the most important results of Mr. Clark's engineering will be that Calcutta will have its sub-soil water carried away; and it will then be the only city in India to which "sub-soil drainage" has been applied. It has been stated that, if a hole is dug in any part of the town, it will speedily fill with water drained from the neighbouring soil, and will so remain until the dry season evaporates a large portion of the moisture, and allows another part to soak away, through a sub-soil more or less porous, to the natural drainage of the country.

If the foundations of a house, for instance, be laid in trenches cut in the soil, similar in depth to the hole alluded to, it is evident that during the wet season they will stand in water. Absorption takes place, damp rises to the floors and up the walls, and it becomes an unhealthy habitation; in England this state of things would be obivated by a few pottery tubes laid a little deeper than the foundations, and carried on to drain into some channel with fall enough to receive it. The same will now take place in Calcutta; the sewers will be laid at sufficient depth from the surface for the entire carrying out of the sub-soil drainage of the ground.

We look upon this as quite an era in the history of Calcutta, nay of India; for the experience gained here in a place presenting the greatest difficulties, and yet certainly requiring it most, must have an important bearing on the public health of the country.

For the last few years scientific enquiry has been directed to the investigation of the bearing of sub-soil damp in relation to disease. There are many towns in England—Salisbury for instance—where the mortality has been reduced by 25 to 40 per cent. by attention paid to sub-soil drainage.*

To Calcutta, in the future, it will be a most interesting question. Professor Pettenkoffer, the Professor of Hygiene at Munich, whose theory at present is that the infecting matter of cholera is not a product of the human intestines, but of the soil, formed his opinion from his observations during an epidemic at Munich, by noting that the situation of houses on a porous and undrained soil ensured a greatly increased rapidity and energy in diffusion of the disease. This is quite the question of the day now in England, and in no city could its truth be more effectively demonstrated than in Calcutta, "the hot-bed of the disease."

Professor Pettenkoffer convinced himself by ample evidence that the penetration of the soil by the discharges of cholera patients was the first essential link in the chain of propagation, and the coincidence of this part of his theory with Snow's affords a strong support to it. The Bavarian Professor considers, however, that the further stage is not the defilement of the drinking water, but in the formation of a miasmatic vapour from the decomposing matter, which vapour conveys the poison by inhalation to the lungs of the inhabitants of the houses.

The question of sub-soil drainage, as applied to India, is a very large one; generally speaking, the most unhealthy stations of the army in the Bengal Presidency are those that stand upon a retentive and undrained sub-soil. Enough has been said, however, to show the importance of the subject, and to glance at the relation damp and undrained ground may bear to disease.*

The drainage thus having been satisfactorily accomplished, the sewerage has to be considered. It is intended that all the house and street sewage should be carried off by channels of proper size and levels. These will all be so flushed that the much dreaded evolution of sewer gas cannot take place, from there being nothing left in the sewers to generate it. The present works will allow 12 millions of gallons of water, and in addition a ¼ inch per hour of rain-fall to be passed daily through the sewers, and there are only about a dozen days in the year when the tide of the Hooghly cannot assist.

The only apparent chance of failure in the whole scheme is deterioration of material. It has been said that the brick work of these sewers will be influenced by the soft, or quick, sand through which they pass, and that they may break their back from not resting on any firm foundation; that the action of the contents of the sewers has in India a very corroding effect; that rats will be very destructive, &c., &c.; but there is no reason to suppose that the practical experience gained in England, under *the same conditions*, will be at fault here. If anything, the bricks and masonry work is superior to that of England, and the talent is identical; and supposing even the worst that could happen, *viz.*, that a fracture took place, there would be no escape of sewage, because in such localities the sub-soil is always saturated with water, the head of which must be above the sewage head, consequently the stream would be inwards of water, not outwards of sewage.

At present there is no sign of deterioration or failure throughout the whole length of the sewers, and sufficient time has elapsed to test many of the contingencies feared.

The ultimate disposal of the sewage must be glanced at; there are two plans proposed,—1st, by reclamation of part of the area of the Salt Lake, which Dr. Smith urges should be begun at once; 2ndly, by conveying it still further off, and discharging it into tidal creeks, far from the dwellings of man, whence it will be eventually carried out to sea by other and numerous channels, care being taken that the channels should not silt up, and that there could be no sanitary evils inflicted on the neighbouring country.

The Sanitary Commissioner concludes by proposing a scheme for altering the present sewage system of Calcutta.

There is doubtless much in the present system most offensive and hateful. For instance, the night-soil carts, in passing

* Mr. Clark was consulted on the drainage of this very town by the Engineer employed on the works.

* Arrangements are now in progress to test the level of sub-soil water, here, [illegible], throughout all the stations of the Bengal Presidency.

[illegible] the sewage [illegible] [illegible] [illegible]

Council and vice-presidents for the ensuing year appointed. The report of the Council was adopted, and resolutions were carried in favour of an increase of salary and a superannuation allowance for medical officers of dispensaries. Dr. Morrongh of the Madras Army proposed, and Dr Nugent seconded, the following resolution, which was carried unanimously:—"That we most respectfully press on the authorities the propriety of adopting in the Queen's service the same rule of promotion after 12 years' service as has been adopted in the Indian Medical Service." The members of the association dined the same evening at the exhibition building. Dr. Martin, the president of the association, being unavoidably absent, the chair was occupied by his predecessor in that office, Dr. Rawdon Macnamara. A very agreeable evening was spent by all present.

An unfortunate case of poisoning by cyanide of potassium occurred here on the 5th. The subject of it, a gentleman well known in Dublin, and brother of a distinguished medical practitioner recently dead, took a dose of a mixture supposed to contain carbonate of ammonia, complained of a choking sensation in the throat, and died in twenty minutes. At the inquest it was ascertained that the store-keeper of a very respectable firm, at whose shop the mixture was compounded, had filled a bottle labelled "carbonate of ammonia" which was used on this occasion by the dispenser, with cyanide of potassium!

A good deal of excitement has been caused in medical circles here by the discussion as to the effects of lying-in hospitals, on the production of puerperal fever, which has been going on for the last two months at the Dublin Obstetrical Society. At the meeting of this society, on the 13th March, Dr. Evory Kennedy began to read an elaborate paper on this subject, which occupied the entire of that meeting, and of the following one on the 10th April. His views were contained in the following 13 propositions:—(1) Puerperal metria is due to absorbtion of poison by the parturient female (2) Any parturient female may generate this poison, which may, under favourable circumstances, be absorbed by the generator, or by any other parturient woman. (3) The generation and absorbtion of this poison are in direct proportion to the number of women lying in together, or breathing the same atmosphere while lying in. (4) This disease find its *habitat* in lying-in hospitals, in which it appears and re-appears at uncertain intervals. (5) Its appearance in lying-in hospital is often traceable to the occurrence of other zymotic diseases, or to a bad state of the hospital, in which, for some time before it breaks out, the labours are succeeded by bad recoveries. (6) It is contagious, following the steps of certain practitioners, and not those of others in the same locality. (7) It is epidemic, confined to certain localities. (8) It is confined not only to certain hospitals, but to certain wards of those hospitals. On the other hand, (9) zymotic metria is comparatively rare among women delivered in their own houses; or, (10) in small hospitals or cottages containing only one or two beds. (11) Hence the conclusion that large lying-in hospitals cause numerous deaths from metria, which would not occur were parturient women treated separately. (12) But the advantages, without the dangers of large hospitals, might be secured by groups of detached cottages, each containing not more than two beds. (13) The mortality among lying-in women would be greatly reduced by an alteration in the construction of our lying-in hospitals. Dr. Kennedy supported these propositions by a formidable array of figures, derived from the returns of the Rotunda and Coombe Hospitals of Dublin, and other lying-in hospitals in Great Britain and on the Continent; and contrasted the death-rate of these with that of the "cottage hospitals" for parturient women at Limerick, Waterford, and New Ross. He recommended that the Rotunda Hospital should be closed to parturient cases, and devoted altogether to the treatment of diseases of women; and that round the garden (Rutland Square) to the north of it a number of separate pavilions should be erected, each to contain only two beds, for the reception of lying-in women.

In a city which boasts of the oldest and finest lying-in hospital in the three kingdoms, and where extensive additions are being made to a second hospital of the kind (that in the Coombe), these revolutionary doctrines, coming from an ex-master of the former institution, and one of the leading obstetricians of the day, attracted general attention; the more so as, if followed out, they apply equally to *all* large hospitals. The discussion of Dr. Kennedy's paper was adjourned till the next meeting of the society, on the 8th May, and has been continued every Saturday night since. I believe, that the debate is now concluded, except for Dr Kennedy's reply (or defence, as one might almost call it, which is to be read hereafter. As yet, all the speakers, with one exception, have been on the conservative side, but what the general verdict of the society will be remains to be seen. Dr. Churchill, Dr. Beatty, and especially Dr. M'Clintock, advocated the cause of large hospitals most ably; on the other hand, many of the speakers damaged the cause which they meant to serve by the feeble arguments which they used (such as that metria *must* be more common among women delivered in the squalid purlieus of Dublin, than among the patients in the magnificent well-ventilated wards of the Rotunda, a complete *petitio principii*), or by adopting a jocular (not to say scurrilous) tone towards Dr. Kennedy. Both parties, it seemed to me, were too fond of bringing up statistics as infallible arguments on their own side, and at the same time meeting those quoted on the opposite side with the old assertion that "figures can be made to prove anything one pleases." The conservatives as yet have the best of it in point of numbers, as is always the case when reforms or revolutions are first mooted; but it is certainly remarkable that the leaders of the anti-hospital movement should be two men of such high repute and such well-secured eminence in their professiou as Sir James Simpson and Evory Kennedy.

On the 3rd, a full length statue of Sir Dominic J. Corrigan, in his robes as president, was unveiled in the new hall of the College of Physicians. This hall, with its portraits of the various presidents, the marble statues of Marsh and Corrigan, and the stained glass window presented by the latter during his period of presidentship, is now one of the handsomest in Dublin, and is worthy of the ancient corporation who have erected it. At the meeting of the Medical Society, held in this hall on the evening of the 19th May, Mr. Tufnell read an interesting case of death from diffuse inflammation, and typhoid pneumonia, following the rupture of a guinea-worm, the broken end of which had retracted within the tissues. The patient was a gentleman who had recently returned from India. Mr. Tufnell, on this occasion, referred to the plan described in the *Indian Medical Gazette* for January, 1868, of hastening the extrusion of the worm by the application of carbolic acid, and exhibited a worm which had been removed in this way in *two hours*, and which he had received from a medical officer on furlough from India. As this plan is not perhaps as generally known as it deserves, he took the opportunity of calling attention to it, and read at length the case detailed by J. N at page 7 of your third volume.

I have just heard that the meeting of the Obstetrical Society fixed for this evening, at which Dr. Evory Kennedy was to have replied to his opponents, has been postponed, so I will detain this no longer.

Golandaz.

Review.

Report on the treatment of Epidemic Cholera. By Dr. John Murray, Inspector-General of Hospitals, Bengal Medical Department.

In order that we may dislodge an enemy it will hardly suffice simply to take a general survey of his position, but it is necessary to attack every point that he occupies. A single battle crowned with victory may weaken him, and expose his entrenchments; but to secure permanent success and complete conquest, every advantage must be followed up, until no doubt as to its issue remains. It is upon principles such as these that the author of the report now before us has, for many years past, been doing battle with one of man's most deadly enemies—Asiatic Cholera. Dr. John Murray is not one of those individuals who are content simply to examine into the circumstances of this horrible disease, and then stand paralysed and aghast at its magnitude and malignancy; on the other hand, since 1831, when he first encountered cholera in Paris, he has made constant endeavours to attack the most assailable points of this destroyer of men, and his endeavours have been crowned with no small success. Dr. Murray, early in his career, seems to have realized the fact that in cholera he had no phantom to contend with, but that whatever the active principle of the disease consisted in, it was something real and tangible,—no earth or heaven born influence which man could only hope to study in its deadly effects on his fellow-creatures; he believed that, like small-pox and other similar diseases, the cholera-producing matter was, without doubt, something that could be transmitted, and is therefore communicable from man to man; or, as he remarks, it "spreads and multiplies by reproduced, but whether vegetable or animal is

[illegible] Dr. Murray studied [illegible] with benefit to [illegible] and [illegible] at that time [illegible] theoretical, and [illegible] opinions held by most authorities in this country, he nevertheless [illegible] tion, has seen them at last admitted as true by almost all the [illegible] is doubtless very much due to the decision arrived at by the International Sanitary Conference of Constantinople held in 1866, and to the influence of Mr. Simon, Dr. Farr, and other English authorities; but this fact does not, in our opinion, detract from the merit due to Dr. Murray of having advanced ideas on these matters some fifteen years ago, which are now, because undoubtedly true, admitted by most of the medical officers practising in [illegible]. We shall [illegible] to the action taken by Dr. Murray as Inspector-General of the Indian Medical Service in this presidency, with regard to preventive treatment of the disease in its endemic area. The Constantinople Conference, and more lately the Registrar-General of England, have stated their belief that the matter may safely be left in the hands of the Indian Government; but we fail to notice as yet [illegible] of any response to this call on the [illegible]

The nature of the [illegible] of cholera, or even its mode of action on the human body, are but briefly referred to by Dr. Murray: he evidently inclines to the theory which attributes the symptoms of cholera to the effect of the poison on the sympathetic system, inducing diminished action or total paralysis of these nerves according to the intensity of the poison. This seems to us rather a dangerous doctrine to inculcate, because we know so little as yet of the action of the sympathetic system in health, that we can hardly, with safety, speculate on the effects of the loss of its influence in disease. And yet the matter is of great practical importance, as we cannot hope to arrive at correct ideas as to the treatment of cholera until we can comprehend its pathology.

Admitting the existence of a poison as the cause of cholera, there are two theories at present which divide men's minds as to [illegible]: the one [illegible] by Dr Johnson, and having an able advocate in this country in Dr. Cannon of Lucknow, [illegible] that the cholera matter entering the blood acts as an irritant poison, affecting the nerves, and through them the coats of the smaller arteries of the lungs, obstructing the circulation of fluid through these organs, and thus the blood receives less oxygen than in health; this deficiency of oxygen in the circulating fluids leading to the symptoms of the algide stage of cholera. The other party maintain that in consequence of the alvine flux the blood loses its serum, the corpuscles their water of composition, and becoming dehydrated they can no longer fulfil their office as carriers of oxygen; the *vis afrontè* of the capillaries is destroyed, and hence algide symptoms are induced. These theories differ essentially as to the remote cause of collapse of cholera, but they merge very closely towards one another, and probably to the truth, in that they recognise the want of oxygen in the circulating fluids as the chief factor in the production of the collapse of cholera. We will not attempt to determine which of these theories is correct, but as many [illegible] of the leading men in Europe dissent to the proposition of any blood poisoning at all in cholera. They believe the action of the poison or principle of cholera is limited to the destruction of the epithelium of the intestinal canal, giving rise to the alvine flux or drain of serum from the blood, which, in its turn, induces the consequences above noticed. Dr. Murray, however, avoids all speculations of this kind, and expressly affirms that "the object of the investigation is to discover what facilitates its dissemination (the germ of cholera) and increases its reproductive power, and what practical means have proved useful to enable the human body to avoid or resist the action of the poison, and remedy its injurious effects."

In addressing himself to the solution of this most important problem, Dr. Murray considers his subject under three heads: [illegible] and lastly, the treatment of the disease.

With regard to [illegible] he very justly remarks that, however bad these may be, they cannot induce cholera *per se*. [illegible] There is no such thing as self-generated Asiatic cholera. But [illegible] the purity of the air they breathe, the water they consume, and the food they eat; "bad conservancy and all sanitary defects, which act prejudicially on the general health, predispose to the action of the cholera poison." "The human body appears to be the chief medium of reproduction or multiplication and dissemination of the poison."

Our author thinks there can be no reasonable doubt as to the power which drinking water exercises in the extension of the disease. It also spreads in or near drains or sewers. "Contact with the excretions from cholera patients or with articles of clothing" may induce an attack of cholera. The poison may also, Dr. Murray thinks, be inhaled into the lungs, and so enter the blood; this is particularly the case in ill-ventilated rooms occupied by cholera patients. He says the period of the incubation of cholera "in general is an interval of 12 or 24 hours after imbibing the poison, before active symptoms appear. Two days are not generally exceeded; but it is sometimes four days before the disease shows active signs." This is a most important axiom; and coming from a man of Dr. Murray's shrewdness and long experience it is of peculiar value, bearing as it does directly upon the circumstances of quarantine in relation to cholera.

We entirely concur with the other remarks [illegible] from this report, but wish that Dr. Murray had become more definite with regard to the matter of contact. Does he or does he not consider that the act of touching moist or dry cholera evacuations may induce an attack of cholera? From the text we are left in doubt on this matter, and hope that in any re-publication of this report, Dr. Murray will explain his views more fully on this point.

With regard to the preventive treatment of cholera, our author bases all such measures, distinctly and clearly, on the fact that the disease depends on a specific germ, and therefore our main endeavours must be directed towards "destroying, isolating, or excluding the generating source" of the disease; consequently he advocates quarantine regulated by the circumstances of the case, and still more by the dictates of common sense. He insists strongly on the necessity for having special hospitals for cholera patients, thereby confirming the opinion formed on this subject by the Epidemiological Society; Sir T. Watson and other distinguished men protesting like Dr. Murray against the admission of cholera patients into our General Hospitals. He justly observes that "perfect isolation of the sick is impossible; but that should indicate the course to be followed."

Our author has naturally, from the opinions he holds on the communicability of cholera, been a strong advocate for the removal of infected troops from cantonments into cholera camps, and, from the valuable tables appended to his report, we learn that "the admissions in 20 stations attacked in the three epidemics of 1856-60-61 amounted to 127·17 per mille, while in the three epidemics of 1862-63-67, in 31 stations it only amounted to 47·34 per mille." Dr. Murray attributes this vast improvement in the health of the troops with regard to cholera mainly to the fact of the men having, during the latter period, been instantly removed into cholera camps, when the disease has appeared among them. The rules laid down by Dr Murray for the removal of troops under these circumstances are, like all the other suggestions contained in this report, concise, eminently practical, and decisive; there is no uncertainty in the measures he advocates, they are founded on a clear conviction of the nature of the disease; he writes of it like a man who has grasped and realized his subject; he discusses facts and conclusions formed in the best of all schools, that of experience.

With regard to the treatment of cholera, Dr. Murray divides the disease into four stages:—In the first, diarrhœa, he gives a very decided opinion against the use of purgatives; but speaks as strongly in favor of opiates "together with wine in moderation, and nourishing diet with little change from routine."

In the second stage of the disease, choleraic diarrhœa or cholerine (for the latter Dr. Murray insists on very strongly is cholera to all intents, and extending the disease over the country quite as much as cholera), he still advises opium to be given, the patient's pulse being distinctly felt, but the stools having the congee or rice-water appearance peculiar to Asiatic cholera; in this condition opium "is of the utmost value in checking undue action to the bowels;" "there is danger of its being continued into the following stage, however, when it [illegible] by [illegible]

In the third stage, or that of collapse, Dr. Murray recommends water to be given in moderation, but like most other authors on the subject, he considers that little can be done in the collapse of cholera; in fact "powerful remedies are recommended, but in the collapse of cholera they are powerless, but may accumulate in the system to a fatal extent." Opium is always harmful, and, in most instances, stimulants also; "calomel, the old idol of Indian Doctors, is inert." He does not advocate the use of acids nor astringents, but speaks favourably of quinine as a prophylactic.

In the fourth stage of the disease, that of reaction, "careful nursing is of vital importance," and the various complications that may arise must be treated upon principles generally applicable to similar forms of disease arising under other circumstances.

Want of space prevents our following Dr. Murray through the second part of his appendix, which consist in an analysis of the answers received from a number of Medical Officers in various parts of India on the subject of cholera. We are by no means sure that data of this kind are of much value; it seems to us it is not the *amount* of evidence collected which is of importance, for when we find questions answered by a considerable number of medical men—questions which persons like Mr. Simon and Dr. Farr or Pacini would hesitate to give an opinion on; we rather doubt if the information thus obtained can be turned to any practical advantage. For our part, we prefer the individual opinions of a man like Dr. Murray, who, we know, has made the subject his special study for years; and we have no hesitation in saying this report of his is a most valuable addition to the literature of cholera. We recommend it with confidence to the study and careful consideration of medical men in India and other parts of the world; and most sincerely trust the author may be spared to initiate fresh measures, and place those he has for so many years striven to establish, upon a firm basis, and thus realize the hopes we are convinced are so near his heart—the relief from intense suffering and untimely death of many of his fellow-creatures.

A Dictionary of Materia Medica and Therapeutics. By Dr. A. Wahltuch, M.D., &c., &c. Churchill and Sons, London, 1868.

This is a very handy book, and one which must have cost infinite trouble in its preparation. It contains the Latin, English, Italian, German, and Russian synonymes; and, under the column headed "Physiological Effects and Therapeutics," there is a brief *resumé* of the modes in which the remedy is supposed to act, and the diseases to which it is applicable. Under the head of "Prescriptions" the chief formulæ of distinguished physicians and surgeons are arranged, into the composition of which the article enters.—*The Lancet.*

Auscultation of the Heart. By T. Churchill, M.B., London: Churchill and Sons.

This little compilation is calculated to be of great use to beginners, who have not unfrequently considerable difficulty in mastering the subject of valvular disease. Mr. Churchill arranges his materials in two columns—one dealing with the systole, the other with the diastole of the ventricles. The mitral valve, in health and disease, is first considered; then the causes of its normal and abnormal sounds are discussed, as are the characters of the pulse. The aortic valve is considered in the same way, in health and in disease, both during the systole and and the diastole. The causes of the abnormal sounds and the nature of the pulse are all taken in order.—*Medical Times and Gazette.*

Official Selections.

REPORT ON THE JAILS, &c, OF EASTERN BENGAL, BY OFFG. DEPUTY INSPECTOR-GENERAL OF HOSPITALS, H. B. BUCKLE, C.B.

The Dacca circle of medical inspection includes a large portion of Eastern Bengal, the Cossiah Hills (Shillong), the valley of Brahmapootra from Gowalparah upwards, and Assam as high as Debrooghur. The jails naturally follow this arrangement. Those in Eastern Bengal, namely, Dacca, Mymensing, Furreedpore, Burisaul. (Backergunge), Noakhally, Tipperah (Comillah), Chittagong, those in Sylhet and Cachar; at Shillong; and those in Assam, as Gowalparah, Gowhatty, Nowgong, Tezpoore, Seebsungor, and Debrooghur.

To a great extent the jails in Eastern Bengal are placed more or less under similar influences with regard to climate and the sanitary state of the districts. The Dacca division comprises the districts of Dacca, Mymensing, Furreedpore, Backergunge, Sylhet, and Cachar; this in its whole extent is a low alluvial tract, intersected in every direction by rivers, subject to excessive rainfall and periodical inundations; the climate damp and moist; vegetation luxuriant; added to which the habits of the people intensify the causes of disease. The healthiest localities are on the banks of the rivers, the ground there being higher, while in the interior, between the rivers from the ground gradually sloping away from the higher banks, there are large jheels communicating by khals or inland creeks with the different rivers during the rainy season when they are full; but as these subside, and the waters dry up, they are converted into stagnant jheels and marshes—a prolific source of malarious disease.

The habits of the people in digging holes for earth to make mounds on which to raise their huts sufficiently high above the inundation, surrounding the villages with a hedge of bamboos, planting fruit and other trees, then allowing the undergrowth to grow to such a degree that the village is lost and buried in a jungle, while the holes from which the earth was excavated filled with stagnant water, half putrid with rotten vegetation, now nominally become a tank, is used indiscriminately for drinking water and as a cesspool,—all add to the wide-spread unhealthiness of the districts.

The medical history of such a locality is simply to detail periodical visitations of disease—cholera and fever.

Dr. James Taylor, in his sketch of the Topography and Statistics of Dacca, published in 1839, mentions a "malignant distemper," the nature of which is not described, as having in the year 1781 carried off a large number of the inhabitants of Calcutta; and in September of that year, the Magistrate of Sylhet writes—"it was now raising with the greatest fury in Sylhet;" in the year 1797 the Collector alludes to the sickness and mortality in a Pergunnah of Backergunge, and states that in one house, 17 deaths occurred in 11 days. Dr. Taylor mentions that, in 1817, epidemic cholera appeared in the Pergunnah of Sonergong, Dacca, and that up to the period of his writing in 1839, it had appeared at uncertain intervals. "Between 1828 and 1837 only 28 cases were treated in a regiment of Native Infantry and a detachment of 30 Artillerymen; in 1825, 427 persons died from it in the city of Dacca."

Dr. Wise, the civil surgeon of Dacca, states in his report on cholera, that between 1830 and 1838 the mortality in the native hospital at Dacca was 48 per cent.; "taking the decade from 1840 to 1849, it appears that cholera was most prevalent during 1842 and 1845, but in all the other years it broke out with more or less severity."

During the next ten years the outbreak in 1855 is noted as particularly severe; "since 1845 no such sickly season had occurred;" 1857 is spoken of as a healthy year. The other years, the normal state is recorded, cholera always present with occasional outbreaks.

The history of cholera outbreaks since 1860 up to the present date is fairly complete; it is that of an annual occurrence of one or more outbreaks, the disease being always present; the years 1865 and 1867 exceptional, the disease not raging with the usual virulence: this was especially the case in 1867.

Dr. Wise, in his report to the Sanitary Commissioner of Bengal, dated April, 1868, states, "during 1867 several villages in different parts of the district were reported in which fever of a deadly type was prevalent. The fever prevalent was intermittent, but a low remittent was also met with among the adults. In several cases large quantities of blood were passed by vomiting or by stool."

The villages visited were found in the condition already described; "the houses buried in dense jungle, and each one had close to it a hole filled with stagnant water," rank vegetation, malarious exhalations, decaying animal and vegetable matter, fermenting excreta, and the drinking water if not on the banks of a river from the same stagnant hole; even if from the river that was also contaminated with decaying matters; "the villagers were very sickly, the majority being anæmic with a tendency to dropsy."

[illegible] were not exempt from it, and [illegible] every year [illegible] villages are reported as being swept with [illegible] which sweeps off a large proportion of the inhabitants.

"It is only within the last 40 years that these [illegible] have been known at [illegible] small pox [illegible] the country for [illegible] years, and caused [illegible] thousands, but the health of the population at large was better than it is now."

"Among the districts [illegible] of old tanks, [illegible] in the midst of jungle. And the traces of former cultivation in what are now barren tracks, all indicate the existence of a population which has disappeared."

"Sonargaon, once the seat of Government and capital of Eastern Bengal, is now [illegible] jungle, and the thousands who [illegible] are represented by a few Mahomedans living in [illegible] and wasted by constant fever. Bikrampur and Bickrampur [illegible] formerly the residences of Hindoo Rajahs, and of a [illegible] population, have [illegible] disappeared, the inhabitants are sickly, the children are almost all subject to spleen, and fever and cholera are yearly visitants."

From this hurried and superficient sketch of the medical topography of Eastern Bengal, it is obvious how seriously the health, both of the inhabitants and of the jail population, must suffer.

Every influence usually considered to engender endemic disease is present; the diseases, cholera and fever such as would [illegible] be anticipated under the circumstances; thus all tends to support the opinion expressed by the members of the Cholera Conference, that Eastern Bengal is the birth-place of cholera. If this is so, or if there are grounds to justify this belief only in a modified degree, the sanitary state of Eastern Bengal becomes a very serious question, and likely to affect the future salubrity of Calcutta. The exports to Calcutta, and the facilities and rapidity of communication are daily increasing at the different entrepôts and railway terminis, large towns will spring up; that the sanitary state of these towns more directly in communication with Calcutta should be carefully attended to, is most important. It would be better, instead of leaving this to the discretion of local communities, that a general system should, after due enquiry, be adopted, both with reference to draining larger districts, if such be possible, and also as regards the cleanliness and conservancy of towns and villages.

To give an average idea of the state of sickness in the Dacca division, a Return (No. 1) is appended to this report, shewing the mortality from cholera, fever, and spleen for nine months. The return is deficient in not giving the months of January, February, and March; in those months the deaths from cholera would probably have been numerous. The return is copied from the thanna reports forwarded to the Commissioner.

Jail statistics of the Dacca Circle for the year 1868.—The average number of prisoners or mean population in the jails was 3,86 6·95, the total number treated 5,603, which [illegible] a rate of [illegible] per cent., or 144·11 per cent., deaths 174, being at the rate of 3·10 per cent. to the numbers treated, and [illegible] per cent. to the average strength of prisoners in jail. The average daily sick 152·63.

Zymotic diseases have been the chief causes of [illegible] sickness and mortality, the more so influences described above acting generally throughout the districts, than to the sanitary state of [illegible] the prisoners in jail [illegible] more favourably placed as regards health, than the population at large.

The deaths amounted to 174 among a daily average on mean [illegible] of 3,866·95, which gives a rate of 4·47 per cent., or 44·70 per 1,000.

The [illegible] deaths were from:—		
Zymotic diseases		116
Constitutional	,, ...	25
Local	,, ...	25
Developmental	,, ...	6
[illegible]		1
,, execution	... ...	1
	Total	174

Statistics [illegible] are recorded [illegible] with the [illegible] that [illegible] disease is by no means rare in tropical countries.

[illegible] the Medical Officer's Sanitary Report, the [illegible] are recorded, also the influence on the prisoner's health exercised by the [illegible] and the [illegible] remarks as to [illegible] ness of the clothing noted. The conclusion is that the supervision of the jails has been carefully conducted, and the material benefit of the prisoners sedulously provided for.

Vaccination.—The number of vaccinations during the past year are 9,639, of which 7,089 are reported as successful; this is a less number of vaccinations by 324 than in 1867. In many parts of the circle, the prejudice against vaccination is very strong, especially in Chittagong, Sylhet, Cachar, Shillong, and most of the stations. As [illegible] in any of the neighbourhood of the [illegible] stations and where [illegible] officers have exerted themselves, that it has made any progress.

As to [illegible] have to remark [illegible] general character, gathered from the perusal of the several Medical Officers' Sanitary Reports, and the other records in this office, detailing the general history and statistics, both medical and otherwise, of the different districts.

RETURN No. 1.

Deaths from Cholera in the Dacca Division, during the 9 months ending 31st December, 1868.

District	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Dacca ...	39	5	38	7	9	27	28	336	416	1,754
Mymensing ...	22	5	12	5	3	28	32	61	1,413	[illegible]
Furreedpore ...	87	5	5	1	6	27	5	51	195	[illegible]
Backergunge ...	610	44	83	38	14	25	24	[illegible]	[illegible]	1,[illegible]
Sylhet ...	154	5	22	18	13	27	30	182	[illegible]	1,[illegible]
Cachar ...	[illegible]	[illegible]	1	14	22	4	4	1	60	110
								Grand Total ...		[illegible]

Deaths from Fever.

District	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Dacca ...	[illegible]	[illegible]	33	27	39	[illegible]	[illegible]	336	416	1,712
Mymensing ...	18	11	113	108	61	93	157	[illegible]	[illegible]	[illegible]
Furreedpore ...	141	14	134	[illegible]	87	84	141	572	614	[illegible]
Backergunge ...	60	24	46	20	20	28	22	[illegible]	[illegible]	[illegible]
Sylhet ...	152	[illegible]	42	[illegible]	13	27	[illegible]	[illegible]	[illegible]	1,929
Cachar ...	[illegible]	[illegible]	1	14	22	4	4	1	60	135
								Grand Total ...		[illegible]

Deaths from Diseased Spleen.

District	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Dacca ...	27	2	26	29	38	57	[illegible]	[illegible]	[illegible]	17
Mymensing ...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	42
Furreedpore ...	[illegible]	[illegible]	[illegible]	[illegible]	7	[illegible]	26	[illegible]	1	230
Backergunge ...	[illegible]	4	11	[illegible]	22	13	20	20	9	118
Sylhet ...	4	4	[illegible]	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	24
Cachar ...	No return.									
								Grand Total ...		[illegible]

H. B. BEADLE.

Local Correspondence.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—It is now more than a year past since G. G. O. No. 550, of the 5th June, 1868, was issued, but nothing has yet been decided when we are to get the increased rate of pay so promised thereby. On enquiry from my Deputy Inspector General, I find that I am not to be [illegible] Hospital Assistant as at present engaged under G. G. O. No. [illegible] of 1867. I may very well [illegible] the strength of that Order No. 550 we do [illegible] get pay at two of the [illegible] rates [illegible] [illegible] May, and owing to our [illegible] the amount has been [illegible] from our pay of subsequent months, thereby not only increased our difficulties, but makes us very uneasy. One poor old man, Sir, drew the increased pay, and has since been invalided, and they want to retrench him and make him pay back what he received out of his present 10 Rs a month. There are many sufferers in various circum-

stances, but if Government would promise us the arrears of pay they would all be happy. You can easily imagine, Sir, that the bare pay of our grade, which we now get on the old scale, is inadequate to meet with the common necessaries to support ourselves and families, and as the medical subordinates whose pay and positions are also settled by the same Order are enjoying the benefits with effect from the 27th May, 1868, we, poor Native Doctors, cannot understand why our case has not been decided.

I hope, Sir, you will be so kind as to urge on Government to settle the question on an early date, and relieve us from the anxiety of mind and distress as well as pecuniary embarrassment which we are now suffering.

I remain, your humble servant,

MILITARY NATIVE DOCTOR.

Extracts.

IODIDE OF POTASSIUM IN SYPHILIS.—To obtain the wished-for effect of this medicine in syphilis, its use should be limited to a certain class of symptoms which modern Syphilographers have termed "tertiary;" such as nocturnal pains in the head and the shafts of the long bones in the extremities; nodes; affections of the bones and cartilages generally; tubercles; gummy tumors; and transition states, by which I mean foul, sloughy, and rapidly-spreading ulcers, which succeed to the softening of tumors, of gummata, or the rupture of pustules, &c.

In the primary form of syphilis, whether in the soft or hard sores, the iodide is utterly useless as a controlling or curative agent; and in the secondary forms its effects are most uncertain; but, in the tertiary, it frequently works excellent cures. To accomplish this, however, it must be administered in proper quantities, for we frequently see it powerless in a small dose, whilst it is most efficacious in a larger. The iodide of potassium appears to exert two separate therapeutical influences in cases of syphilis. In the first it acts as a general tonic in subjects broken down and weakened by long continual disease. Combined with quinine or bark, and given in small doses for long periods, it restores the appetite and recruits the strength. In such cases the dose may range from five to fifteen grains a day. In the second forms, given in large doses (thirty to sixty grains a day) it acts as a direct antiseptic upon one or more symptoms of syphilis then present in the system. In fact iodide of potassium, although frequently failing to benefit certain tertiary local manifestations of syphilis in small doses, is very frequently curative of the same symptoms when the dose is largely increased.—*Mr. Langston Parker, in British Medical Journal.*

SULPHITE OF SODA AND SULPHITE OF AMMONIA IN INTERMITTENT FEVER.—Dr. W. J. Chandler (Medical Record) reports twenty cases of intermittent fever thus treated in the service of Dr. Austin Flint, at the Bellevue Hospital. He draws the following conclusions:—

1. That in a few cases the paroxysms of intermittent fever are relieved, and possibly arrested by the remedies.

2. That in the large majority of cases these remedies fail entirely to arrest the paroxysm, or to lessen either their severity or frequence.

3. That these remedies require to be given in large doses for a length of time to effect any appreciable improvement.

4. That when given in doses sufficient to modify or arrest the paroxsyms, they produce considerable irritation of the stomach and internal canal.

5. That as remedies for intermittent fever, they are in every respect vastly inferior to quinine.—*American Journal of the Medical Science*, April, 1869.

GLYCOGENIC FUNCTION OF THE LIVER.—Dr. AUSTIN FLINT records (N. Y. Med. Journal) some experiments undertaken by him for the purpose of reconciling the discordant opinions maintained by C. Bernard and Dr. Pavy in regard to the glycogenic functions of the liver. He remarks:—"Although these experiments are not entirely new, my interpretation of them serves to harmonize in my own mind, at least, the results obtained by Bernard and Pavy:—

"1. A substance exists in the healthy liver, which is capable of being converted into sugar, and inasmuch as this is formed into sugar during life, the sugar being washed away by the blood passing through the liver, it is perfectly proper to call it glycogenic, or sugar-forming matter.

"2. The liver has a glycogenic function, which consists in the constant formation of sugar out of the glycogenic matter, this sugar being carried away by the blood of the hepatic veins, which always contain a certain proportion of sugar, and subserving some purpose in the economy connected with nutritions, as yet imperfectly understood. This production of sugar takes place in the carnivora, as well as in those animals that take sugar and starch as food; and is essentially independent of the kind of food taken.

"3. During life the liver contains only glycogenic matter, and no sugar, because the great mass of blood which is constantly passing through the organ washes out the sugar as fast as it is formed; but after death, or when circulation is interfered with, the transformations of glycogenic matter into sugar goes on; the sugar is not removed under these conditions, and can then be detected in the substance of the liver."—*Ibid.*

W. C. KRYLOW, ON FATTY DEGENERATION OF THE HEART.—From his observations under the direction of Dr. Roudneff of St. Petersburg, the author concludes:—

1. That fatty degeneration of the heart is now confined to people advanced in life, but occurs more readily in them than in younger people.

2. That the typhoid processes, especially when accompanied by other severe diseases, induce it.

3. That it is frequently caused by long-standing diseases of bone, suppurations, phthisis pulmonalis, and emphysema.

4. Chronic alcohol poisoning seems to induce the extremest degeneration.—*Virchow's Archiv., in Edinburgh Medical Journal.*

ERGOTINE AS A PROPHYLACTIC AGAINST PURULENT INFECTION AFTER AMPUTATION.—M. Labat publishes an interesting paper with the above title in the Gazette des Hôpitaux. When the first began to use the remedy, M. Labat gave it only after the symptoms of poisoning of the system had appeared, and used to lose patients; now he gives it from the first to the fifteenth day, and he cures them. Under the influence of ergotine, the inflammatory swelling is almost absent, and the suppurations much diminished. There may be sleeplessness and also delay in the later stages of cicatrization. The dose of the medicine is 32 grains daily. His last series of amputations is a remarkable one—twenty major amputations, and twenty recoveries.—*Edinburgh Medical Journal.*

CASE ILLUSTRATING THE USE OF GALVANISM IN SEVERE POST-PARTUM HÆMORRHAGE, BY DR. PATON, BURTON-ON-TRENT.—A stout, pale, flabby woman, and the mother of eight children. All her labors had been easy, but after the last seven there had been considerable hœmorrhage.

There was no hœmorrhage with the expulsion of the child. An assistant rubbed the abdomen gently while the cord was being tied. This was just finished when I was told that the uterus was not so hard as it had been. It was found to be relaxed, and a stream of blood was soon running over the edge of the bed, and along the floor. The uterus was immediately manipulated both internally and externally, and the placenta removed. No full contraction, however, ensued, and severe hœmorrhage continued. Cold water was splashed over the face, abdomen, and valva, but without any result. The hand, cooled in fresh water, was then introduced to the fundus of the uterus, and kneading with both hands kept up for several minutes before a moderately strong contraction ensued. Meanwhile a very large quantity of blood had been lost, and exhaustion was rapidly coming on. Whisky, ergot, and ammonia were given occasionally. The pillows had been previously removed, and the windows opened, so that the room was as cool as possible. She was now of a deadly pallor, with gashing respiration, and extremely rapid, and almost imperceptible pulse. She complained [illegible] and [illegible] seeing things distinctly. The uterus remained contracted so long as constant pressure with kneading was kept up, but when this was discontinued for a few seconds, relaxation again took place, and a considerable quantity of blood was lost.

This state of the uterus continuing, a Kemp's galvanic battery was procured, and a [illegible] passed through the uterus (this was two hours after delivery). Immediate powerful contraction was the result, but slight relaxation returned when the current was withdrawn. A [illegible] current was then [illegible]

[illegible] Medical Journal.

[illegible] Surgeon to the Taunton and Somerset M[illegible] [illegible] [illegible] [

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF THE POISON OF THE COBRA, THE DABOIA, AND THE BUNGARUS, AND OF CERTAIN METHODS OF TREATMENT.

By J. FAYRER, M.D., C.S.I.

Present.—DR. FAYRER and MR. SCIVA.—July 10th, 1869.

EXPERIMENT No. 1.

A large and powerful pariah dog was bitten in the thigh, by a daboia russelii at 3-22 p.m., the dog shewed signs of pain when the fangs penetrated. 3-25.—Walks, but drags the bitten limb. 3-28.—Is lying down; on rousing the dog he is unable to stand; defecation and micturation occurred; shows no signs of suffering beyond occasionally a suppressed whine; tries to stand, but is unable to do so; contents of bladder dribbling away. 3-32—Respiration hurried; pupils dilated; rolls his head uneasily, but keeps the neck turned more to one side; twitching of eyeballs; stretches out the fore-legs in a convulsive manner. Lies otherwise quite paralysed. 3-35.—Breathing regularly, but lies motionless. 3-38—In the same condition; respiration 40 in a minute; slightly raises his head at intervals. 3-45.—Still breathing, but lies perfectly still, giving occasionally a low suppressed whine. 3-53.—In the same condition; has watery purging. 4 p.m.—In the same condition; respiration 45 in a minute. 4-7.—Can just raise its head when roused, the limbs seem quite paralysed. 4-9.—Muco-sanguineous purging: other symptoms the same. 4-18.—Still breathing; more muco-sanguineous purging. 4-20.—In the same condition. 4-40.—In the same position; lying on his side; legs extended; breathing still. 4-45.—Slight twitching of the muscles generally; respiration irregular, and feeble. 4-50.—Dead: a slight tremor, but no convulsive movement preceded death.—Bitten at 3-22 p.m.; dead at 4-50, or in 88 minutes. The body was examined one hour and twenty minutes after death. The lungs were not congested. The liver was darker colored than natural. The blood in the heart and great vessels was perfectly fluid, nor did it coagulate when collected and set apart.

I examined the blood at noon on the 11th July most carefully and deliberately under the microscope, with a high power. There was no change. The red and white corpuscles were in their natural relative quantities; a very few of the red ones were crenate. But there was not a trace of any new cell or molecular matter in the blood.

The perfect and permanent fluidity in the blood was remarkably illustrated in this experiment.

EXPERIMENT No. 2.

A pariah dog was bitten at 3-28 p.m. in the thigh by a large bungarus fasciatus said to be quite fresh, and about four and a half feet long; the bites drew blood. Walking about; drags the leg slightly. 3-34.—Looks depressed and is salivated. 3-36.—Walks about; looking scared. 3-40.—Bitten again in the thigh by the same bungarus; the dog evinced no sign of suffering. 3-42.—Looks dejected; foaming at the mouth; salivated. 4-7.—The dog is sick and vomited a quantity of frothy mucus; vomiting repeated directly. 4-10.—In walking he looks depressed, as though excessively nauseated, and limps in the bitten leg. 4-12. Vomiting continues; lies down for the first time; breathing hurried. 4-17.—The nausea and vomiting continue; looks scared and depressed. 4-20.—Excessive vomiting of frothy mucus. Lies down; is convulsed in the hind legs; looks very ill. 4-24.—Hurried vomiting respiration; twitching of the hind legs. 4-32.—Walking slowly and feebly with a haggard look, vomits frequently, and froths profusely from the mouth. 4-33.—Stands with his head drooping; still very sick; leans his body for support against the wall. 4-45.—No change. 5 p.m.—Appears better. 5-15.—Looks better; no vomiting; respiration more natural. 5-40.—Lying down; when raised on his feet, appears weak, but otherwise better. On lying down, arranged his legs in a natural position as if for sleeping. 6-10.—On being again roused, he walked about; his legs appeared feeble at first, but appeared to recover the use of them. 9-15.—Sleeping comfortably; on being roused, looks brighter and intelligent.

11th July, 6 a.m.—Remained during the night without changing his position; on being placed on his feet appears weak, particularly in the hind legs, he appears somewhat numb in the legs.

I received the following report on the 13th July:—

"The dog died at about 10-30 p.m., of the 12th. Bitten at 3-28 p.m. of the 10th July; dead at 10-30 p.m. of the 12th, or in about 53 hours. Yesterday morning (the 12th) I observed that he was very weak. During the day, and up to the time of his death, he remained lying on one side, with the legs extended, passing at intervals muco-sanguineous matter. On opening the body this morning, I found the blood coagulated in the heart and great vessels. The blood sent to me on the 13th was firmly coagulated. Under the microscope, it presented innumerable needle-like crystals of hæmato-globulin. The red corpuscles visible were very few in number, and were not, so far as I could judge, changed in any way. But I would speak with reserve about the corpuscles of this blood, as the field was so entirely filled with the crystals that little else could be seen even after careful dilution with water and agitation. It is possible that new cell forms may have been there, and escaped detection. The mass of the red corpuscles seem to have been converted into crystals. In both this and the preceding case, the blood was examined some time after death, but I failed to detect any new cell growths."

EXPERIMENT No. 3.

A young cobra, about ten inches long, was bitten at 3-45 p.m., by a fresh full-grown cobra (keauteah) near the tail, so that the viscera might not be injured. The fangs were seen to penetrate, and no doubt could exist that the poison was fairly inserted. Being put on the ground, it crawled away vigorously, seemed unaffected by the bite. 5 p.m.—No change. 11th July, 6 a.m.—No change; it is quite well and active. On the 13th July, I saw it quite well. On the 17th, it was found dead; apparently it had been dead about 12 hours.

EXPERIMENT No. 4.

Another young cobra of the same breed as the last (No. 3) was bitten by a fresh daboia near the tail like the last. The fangs penetrated, and the poison was freely inserted. 5-10.—No change. 6-15.—No change, except that, when moving about, the end of the tail beyond the part bitten appears still, and does not move so freely as the rest of the body. This is accounted for by the nature of the wound inflicted by the formidable fangs of the viper. 11th July.—No change. 13th.—The snake is alive and apparently well. On the 17th, it was found dead, and decomposed; it had probably been dead three or four days. These two young cobras were of one brood; they were caught a few days ago, and are said by the snake-men to be about a fortnight or ten days old.

There could be no doubt about their having been fairly bitten by the cobra and the daboia; no evil result followed up to the 13th, though they died subsequently. Surely this is strong proof that the cobra is but little susceptible, if at all, to the poison of its own species. These snakes being so young may have died from want of food, and partly from the effects

EXPERIMENT No. 5.

[illegible]

11th July.—It seems better.

13th July.—The kitten was quite well.

It was evident in this case, that the animal was not mortally though thoroughly bitten, for the snake was made to close his [illegible] sort of case which probably frequently occurs when men or animals are accidentally bitten—enough venom is injected to cause symptoms of poisoning, but not enough to destroy life. [illegible] Had I administered any of the so-called antidotes, or injected any of the proposed remedies, the recovery might have been attributed to the means used.

That a man or animal so poisoned may be benefited by the use of stimulants, or other therapeutic measures, I do not for a moment deny, but, as I have before said, this is a very different matter to that of administering an antidote that shall neutralize the poison, and by so doing save life.

EXPERIMENT No. 6.

Another kitten of the same size and age, as that in experiment 5, was bitten by a cobra in the left thigh at 4-16 p.m. The bite was very imperfect, and was repeated at 4-20 p.m.

At 4-24—It [illegible] very restless, and [illegible] about violently. 4-25.—Hurried breathing; restlessness. 4-45.—Getting weaker; respiration irregular. 5-5.—Convulsive movements generally. 5-20.—Dead in one hour and four minutes. 6-20.—Body opened one hour after death. Lungs natural; no congestion; the blood, on being removed from the heart and great vessels, soon coagulated firmly.

EXPERIMENT No. 7.

A [illegible] was bitten [illegible] deeply [illegible] by a fresh cobra, at 4-27 p.m., near the tail; no doubt of the penetration of the fangs and inoculation of the poison. No effect was [illegible]. The bungarus was [illegible] on the 16th—five days after the bite.

EXPERIMENT No. 8.

A [illegible] was [illegible] by a fresh daboia, at 4-32 p. m., near the tail.

No evil result followed; the bungarus remained unaffected; on the 16th July was in its normal condition.

Several facts of importance are proved, or their probability [illegible]

In death by poisoning by the daboia, and therefore, probably by all the viperine order—viperidæ and crotalidæ, the coagulability of the blood is generally destroyed. I say, generally, because though frequently, it is not invariably so. In the [illegible] the blood, it was found [illegible] coagulated. It remains fluid after death on exposure to the air.

[illegible] and [illegible] [illegible] of the blood. Death is more protracted, but the deadly effects of the poison are even more quickly manifested than in death from cobra-poisoning.

[illegible]

The poison of the bungarus is less deadly than that of the [illegible] It does not destroy the coagulability of the blood. Perhaps, this may prove to be the case with all the poisonous colubrine snakes. No [illegible] But the [illegible] of the blood of the dog that died from a bungarus bite, into [illegible] of a vessel like and long tubular form, though it is slow in producing its worse effects.

It is very doubtful if the cobra and daboia are affected by each other's poison; but the evidence on this point is not yet complete.

The bungarus is also less susceptible to the poison of the daboia and cobra than *innocuous* snakes, if, indeed, it be affected at all.

[illegible] by [illegible] in any of [illegible] [illegible] to show that it is due to direct [illegible] the nervous centres.

EXPERIMENTS ON THE USE OF THE LIGATURE AND CARBOLIC ACID IN THE TREATMENT OF SNAKE-BITES.

By J. Fayrer, M.D., C.S.I.

[illegible]—Drs Fayrer and Mr. Shoo[illegible]—July 17th, 1869.

EXPERIMENT No. 1.

A [illegible] was [illegible] in the thigh, at 2-45 p.m., by a fresh cobra (venomous). The hair had been previously removed from the part in order that the puncture of the snake's fangs might be distinctly seen. The moment the fangs were withdrawn, the punctures were scarified, and carbolic acid at once applied, and well inoculated into the bites. The tissues were whitened, and the blood coagulated by the acid. 2-53 p.m.—The dog looks depressed and dejected; hanging his head. 3-12.—Lying down; looks dejected, but perfectly intelligent. 3-15.—Respiration hurried. 3-23—Pupils widely dilated. In convulsions, rolled over on the other side; respiration irregular and catching. 3-27.—Violently convulsed. 3-30.—Respiration has ceased, but the heart still beats distinctly. 3-31.—Dead in forty-six minutes. The carbolic acid was evidently of no service in this case.

Post-mortem examination at 5 p.m. Blood coagulated; no crystallization under microscope.

EXPERIMENT No. 2.

A fowl had the feathers removed from the thigh, so that the bites might be seen, and was then bitten there at 2-54 p.m. by a daboia. The wounds were immediately scarified, and the carbolic acid thoroughly applied to the bites. The fowl fell over in convulsions when released, and was dead in less than sixty seconds. The body was opened at 3-35, or in about 40 minutes after death, and the blood was found to be coagulated in the heart and great vessels; some fluid blood escaped into the thorax. The lungs were not in the least [illegible] the blood was particularly noticed, as it has generally been found fluid in the mammals dead from [illegible]

Post-mortem examination of dog, experiment No. 3.

Blood examined at 5 p.m.: fluid when removed, but coagulated on exposure to the air.

Microscopical examination: no crystals; no change.

EXPERIMENT No. 3.

[illegible] was taken from [illegible] immediately

injected with the hypodermic syringe into a middling-sized dog's thigh, at 3-3 p.m. The tube of the hypodermic syringe was not removed; and the syringe being filled with carbolic acid, about 20 drops were injected exactly in the track of the poison, and in the shortest space of time possible. 3-8—The dog is depressed; looks scared; hangs his head; twitching of the hind legs when he is raised. 3-15—Lying on his side almost paralysed; pupils widely dilated. 3-20—Is convulsed. 3-22—General twitching of all the muscles of the body; is quite unconscious. Respiration has ceased, but the heart still beats distinctly. 3-25—Heart still beats. 3-27.—Irregular action of heart. 3-29—Dead in 26 minutes. In this case there could be no doubt of the perfect inoculation of the carbolic acid, for it followed the poison through the same channel, and in the shortest possible space of time, in which any local remedy could be applied, and yet without producing the slightest benefit. The second of time by which the poison preceded it, was sufficient to cause death; no remedy could have been applied more rapidly, unless it had been mixed with the poison and introduced with it; in which case the venom might have been probably decomposed and rendered inert. It appears to be impossible to overtake the poison, and neutralize it when once in the circulation, however rapid may be the inoculation of the supposed antidote.

EXPERIMENT No. 4.

A fowl was bitten in the thigh by a daboia at 3-19 p.m. The carbolic acid was immediately applied to the wounds which had been at once scarified. 3-19-30—Fowl in convulsions. 3-20.—Dead in one minute. Body opened. Blood in heart and great vessels had coagulated.

EXPERIMENT No. 5.

A small dog bitten in the thigh, by a bungarus fasciatus, (one used last week) at 3-13 p.m. The bites drew blood. 3-29—Looks dejected. 5-20—No further change.

18th July, 7 a.m.—No change. At 12, noon, the dog appears very weak; has not altered his position (recumbent) since last report. 6 p.m.—The same; refuses food; gradually drooped throughout the day.

19th July—Died at 1-35 p.m., in about 46 hours and 27 minutes. Blood examined at 7-45 p.m.: blood clotted after death firmly; the serum paler than usual; corpuscles natural; no crystallization.

EXPERIMENT No. 6.

A fowl was bitten by another bungarus, which had also been used last week, at 3-32 p.m. 3-40.—The fowl looks uneasy, but not otherwise affected.

18th, 7 a.m.—Crouching on the floor; wings drooping. *Noon*—Unable to stand; profuse flow of watery blood from the beak. 3 p.m.—Lying on its side; eyes closed. 5-10 p.m.—Died in 26 hours and 18 minutes. Body opened at 6 p.m.: blood coagulated; under microscope no crystallization had occurred.

EXPERIMENT No. 7.

A fowl was bitten by a cobra in the thigh at 3-45-30. Ran about for a moment when placed on the ground. 3-46. Crouched; resting its beak on the ground; fell over, and was dead at 3-47.

Body opened at 5-10 p.m.

Blood thick, but coagulated [illegible] exposure to air.

EXPERIMENT No. 8.

A daboia was well bitten by a cobra near the tail, at 4-5 p.m. 18th July, noon.—No change. 18th July, 6 p.m.—No change; no effect was produced. The daboia was alive a week after being bitten.

EXPERIMENT No. 9.

A varanus flavescens was bitten by another daboia, at 4-15 p.m. The daboia had bitten before. He did not strike his fangs readily through the hard skin of the lizard.

18th July, 3 p.m.—No change. 6 p.m.—No change.

The varanus was not affected; it was alive a week after being bitten.

The daboia was not fresh; and it did not bite vigorously, hence the escape of the varanus.

EXPERIMENT No. 10.

A cobra was bitten by a daboia, near the tail, at 4-3 p.m., and was bitten again by another daboia, at 4-8 p.m., near the same place.

18th July, 5 p.m.—No change; a week later—no change.

NOTE.—The bungarus bitten by the daboia, on Saturday, 10th July, was found recently dead on Saturday, 24th. Death may be due to natural causes. The bungarus bitten at the same time by a cobra is alive and well on the 24th July.

Present:—DR. FAYRER and MR. SCEVA.—July 24th, 1869.

EXPERIMENT No. 1.

In the experiments hitherto performed, the snake has been made to close the jaws on the part bitten, and not been left to strike in the natural way. With the object of ascertaining whether there be any difference in the effect of the compulsory and voluntary bite, the following experiment was performed; and I observed in this, as on other occasions, that the snake rather attempted to frighten than to bite the dog, and it was not until the cobra was much irritated by repeatedly bringing the dog near him, that he gave the fatal bite. It struck the dog twice in the hind leg, apparently without any effect, but afterwards struck, and a for a moment fastened on to the thorax. Two slightly bleeding points marked where the dog was bitten—this was at 3-32 p.m. 3-45.—The dog is affected; vomited and was purged; very restless. 3-50.—Vomiting and staggering as he walks. 3 53.—Convulsed. 3-57.—Heart still beating irregularly; respiratory moments ceased. 3-58.—Dead—in 26 minutes. Another object of this experiment was again to search in the *post-mortem* blood for the corpuscles described by Professor Halford.

The body was opened at 5 p.m., or about an hour after death. The blood coagulated firmly, and was repeatedly examined under the microscope with a high power; but I could detect no change whatever in its corpuscular elements. The lungs, as usual, were free from congestion.

EXPERIMENT No. 2.

Placed a ligature round a fowl's thigh, and tied it very tightly. The fowl was then bitten by a cobra, at 4 p.m., below the ligature. The ligature was tied as tightly as it could be drawn, and appeared to arrest the circulation completely, for the part below became livid, and the limb was paralysed. 4-13.—The fowl lies quiet, and does not seem to be affected by the poison. 4-17.—Is active and lively; hops about in the sound leg. 4-20.—Does not seem to be in the least affected by the poison; at this period, that is, 15 minutes after the bite, the ligature was removed. The limb was turgid and livid from congestion. The bird began to droop almost immediately the ligature was removed. 4-22.—Drooping; does not rise; when raised [illegible]. 4-23. Head falling over; can hardly move. 4-24.—Convulsed. 4-30.—Still alive; faint; convulsive movements continue. 4-33.—Dead. Bitten at 4 p.m.; ligature removed at 4-20; no effect of poison being manifested.

Dead at 4 33, *i.e.*, 13 minutes after the ligature was removed.

EXPERIMENT No. 3.

A [illegible] wounds until all the blood coagulated, and the scarified surfaces [illegible] to take effect; the fowl, as it was running, staggered and fell [illegible] ground.

It continued alive until 5-35; and during this time it showed distinct reflex action of legs, if the feet were pinched, and of [illegible]

Bitten at 4-10 p.m.

[illegible]

Dead at 5-35, or in 64 minutes after the ligature was re- [illegible] vessels.

That, if a ligature be sufficiently tightly applied (the great [illegible] carbolic acid or other caustic agent to the part poisoned, if thoroughly ligatured, may do good by decomposing the poison in the blood in which it is mingled.

But that too much faith must not be reposed in the acid or cautery is proved by this and former experiments, where the poison was prevented from entering the circulation by means of the ligature, and was subjected to the action of the acid whilst so detained; yet, when the ligature was removed, and the stagnant circulation again restored, death followed from the slow absorption of the poison which, notwithstanding the thorough application of the acid, yet retained enough of its deadly qualities to cause death.

[illegible]

It will be seen by these two experiments how long the fatal event was delayed by aid of the ligature and acid.

EXPERIMENT.

[illegible] tioned in former experiments was brought to me again to-day. [illegible] re-placed those originally taken out. I obtained by squeezing the glands about four drops of a deep orange-colored viscid looking fluid of the consistence of mucus. I made a slight puncture on a fowl's thigh with a lancet, and with an ordinary pen inoculated some of this yellow fluid into the wound, at 11½ a.m. For some time the fowl seemed unaffected, but in the afternoon I found it in a lethargic state, crouching with the head drooping, and the point of the beak resting on the [illegible]

This experiment shows that the entire loss of the poison fangs, and consequent comparative inactivity of the glands, does [illegible] also, that on the first removal of the poison fangs, the reserve [illegible] life. This is not always effected by the operation of the snake charmers, for they well know, and occasional fatal accidents have proved, that a new fang takes the place of the old one. I have had the fangs carefully removed from a cobra, and am keeping him to see in what time the new ones come forward. In one instance, I found that, after a fortnight, a pair of new fangs had replaced those removed, but they were not thoroughly [illegible] fangs were removed with the same object, died shortly after the removal of the teeth, but whether the death was due to the [illegible] months in my possession; every effort having been made in vain to make the snake eat or drink, and it is vigorous and vicious as when first caught; but its venomous powers are probably diminished. During this period, the daboia has frequently changed its epidermic covering, and there are occasional deposits [illegible] roused, when it is very active and vicious. The only conclusion that I can come to, is that it may have obtained moisture from the damp air, and may have swallowed flies or cockroaches or other insects that have found their way into the cage. But [illegible] during this period.

ON MALADIES ATTRIBUTED TO LUNAR INFLUENCE—RHEUMATISM, PARALYSIS, OCULAR, &c.

BY W. J. M[illegible], L.R.C.P.

[illegible]

IN [illegible] maladies over which the moon is still supposed to exert influence. These are: 1st, rheumatism; 2nd, pseudo-paralysis; 3rd, certain affections of the eyes. But it is extraordinary and suggestive, that it is chiefly among sailors the belief in lunar power exists, [illegible] are at times quickly affected with night blindness, and the face becomes hideously swollen." By the same authority it is also [illegible] to the rays of the moon." Dr. Peet mentions having noticed [illegible] gent Commander," of the now defunct Indian Navy, is also [illegible] destroyed by exposure to the moon, and also observed sailors [illegible] moon-light." The assertions of a Mr. Thompson, formerly of [illegible] effect. And still more recently (1868) all the above presumed [illegible] Dr. [illegible], and Mr. Berncastle, did not show the existence of any lunar power causing rapid putrescence. And I believe such would be the result under repeated trials. Although during my sea- [illegible] tion of fish or meat becoming sooner putrid during moonlight nights than at other periods. On land, from repeated observation, [illegible]

of the moon. Even admitting the lunar ray hastens decomposition of dead matter, *ergo* that living matter must be so affected, is certainly not a very invulnerable argument. And it would be still more ridiculous to reason, that because the moon has been supposed to exert power over vegetable substances,* living animals are so affected.

Hence the idea of any *direct* lunar influence may be discarded. But that the maladies named do occur, specially on board ship, cannot be denied. It has frequently happened, that persons sleeping on the deck of a vessel have found themselves more or less paralysed, when attempting to rise. Sometimes a leg or arm only suffers, at others, pains and aches—rheumatism in fact—without loss of motive power, is only complained of. In the worst cases, however, there is no real paralysis using the term as now somewhat erroneously applied in medicine. But there is inability to move a limb, as I believe, from the pain motion causes. However stiffened and contracted the member affected may be, a man of strong will is able to demonstrate that no paralysis (vital relaxation) exists. But, unfortunately for the theory of lunar influence, direct or indirect, I have known the same to occur to individuals sleeping on deck, when the moon was *not* visible. And similar remarks apply to instances of swelled face, which moreover are generally found to be connected with a carious tooth. The whole of the ailments are, indeed, simply due to cold caused by exposure to land winds, from being drenched by the falling dew, from sleeping near a sail which directs the wind on the body, or from laying in the current of air entering by a port-hole, or wind sail. A strong breeze playing on a surface wet with dew or perspiration is the real cause of the maladies named. And they present more frequently on board ship, because persons laying on deck are more exposed to changes of temperature, and draughts, from sails, and ports, and position, than people on land. But such affections do occur on *terra firma;* and at the present time I have a patient affected with rheumatism and inability to move the right leg from the hip downwards,—just the condition which has been erroneously termed paralysis,—and contracted, from sleeping exposed to the cold night winds of the neighbouring hills.

On this subject I venture to quote from former writing—"Any medical officer, who has served in the Persian Gulf or Red Sea as I have done, will admit the impossibility of a ship's crew sleeping below, although, indeed, they might be *there by command* during the night, and suffer from disease, as was the case in one of Her Majesty's ships of war some years since cruising in the waters of Iran. During my period of service in the Indian Navy, whether in charge of troops, or simply with the ship's crew, I invariably recommended awnings be spread at night during the hot months for the men to sleep under. Nautical men, however, appear to have an insufferable objection to [illegible] at night; the reasons advanced for non-compliance with such a recommendation from the medical officers being, that a sudden squall might gather under them; that it interfered with the ventilation or working of the ship; that a spark might set fire to them; that it was not man-of-war like; that exposure to the dews of night rotted the canvas! During some portions of the year in the tropical seas, the frightful heat of day is succeeded by a copious deposit of dew during the night. Any one sleeping under the star-lit canopy of heaven only, becomes deluged with dew: if he wrings his garments, water falls from them as though just removed from a well: and handfuls of fluid may be scooped from the ship's scuppers. What wonder then, that the man rises (as I have frequently done) cramped, cold, and with aching pains in the limbs! What wonder that the seeds of rheumatism, of albuminuria, and other chronic diseases enter into the system, destroying health almost before manhood is arrived at..... Yet the capstan made of brass and solid teak wood was religiously covered with canvas every night, while tender flesh and bone—men going to fight their countries' battles—might be exposed, without remorse, to the destruction of their health, and the impoverishment of the state."

The treatment of the rheumatic and pseudo-paralytic maladies thus induced, consists chiefly in warmth, friction, stimulating liniments, sudorifics, and rest. In obstinate cases blisters may be beneficial.

The ocular maladies, *viz.*, *Amblyopia*, with its varieties *Nyctalopia*, and *Hemeralopia*, or nocturnal amaurosis, presumed to be due to lunar influence, cannot, however, be thus referred to cold. According to my experience, neither *Nyctalopia*, (blindness during the day, and vision by night,) nor *Hemeralopia* (the reverse) are so commonly met with as the mixed form *Amblyopia*, in which, although vision may be more impaired at some particular period, it is always more or less affected. The *Nyctalopia*, or day impairment of sight, is quite different from the aversion to light, or photophobia, as exemplified in the albino, or in scrofulous opthalmia, and at first no altered condition or sensitiveness can be detected. Similarly, when either *Hemeralopia*, or the mixed form prevails, there is no apparent structural change. After the disease has continued some time in *Nyctalopia* especially, there is congestion and hyperæsthesia, and the eye is unable to bear the stimulus of bright light. It is also asserted that intolerance to the bright light thrown on the retina by the opthalmic speculum, is often an index to retinal changes where there have been no previous symptoms. In all varieties of the malady in the latter stages, there may be headache, and sometimes the pupils become dilated. All forms of the disease may exist in very varied degrees of intensity, from a slight impairment of vision, of which careless people take no notice, to the appearance of mist before the eyes, to total darkness. The duration may be days, weeks, months, years. The disease is liable to recur. Natives are said to be more frequently attacked than Europeans, and it often prevails epidemically. But although more commonly observed in tropical climates, it has frequently been noticed, both as a sporadic and epidemic malady, in Europe. In one large ship, it is recorded that sixty men suffered. In some parts of Hungary it has also prevailed epidemically. In 1834, at Ofaffendorf, 138 soldiers of the Prussian Army were attacked with night blindness. At Vicennes and Strasburg, epidemics of *Nyctalopia* have occurred. It has also been noticed in Great Britain. *Hemeralopin*, or that condition in which the patient can see well in the daytime, but not at night, is more frequently found among soldiers who have passed quickly from a northern latitude to a tropical station.

It is also well known that night or day blindness, particularly the former, are often feigned. When this is the case, the diagnosis is difficult, and can only be correctly arrived at by having the patient watched when he supposes himself to be unobserved. A case of feigned day blindness was under my treatment but a few weeks back. The patient, a native, appeared, as usual, morning after morning at the hospital, apparently unable to see his path. One afternoon, I accidentally met him running along the road, gazing with the utmost pleasure at the [illegible]

* Dr. Pe[illegible] that a wood resembling [illegible] growing in Pernambuco, [illegible] and [illegible] in the dark night but by the [illegible] A similar assertion has been made with regard to trees growing in the Mauritius. Bamboos are also named as thus affected. But the latter growing hereabouts, (on the Aravellis) however much their durability may be lessened by [illegible] last [illegible] years.

accompanied by congestion of the vascular coat, is the cause of the malady in all its forms. It is undoubted that great heat, or intense light, or continued exercise of the eyes on minute glare from sand, or to reflections of the sun from water, all tend of nervous power, and accompanying general debility of system. illuminate objects to render them visible to the weakened visual among soldiers invalided from India for impaired vision.

induce any form of *Amblyopia*. Livingstone, who noticed the disease prevailing in Africa, does not think it caused by the moon. He remarks:—"You may sleep out at night looking up to the moon, till you fall asleep without a thought of moon blindness." And I well recollect instances of the ailment occurring to persons who had not been so exposed. Still lunar light on the eyes during the hours of sleep may act as an additional excitant. The retina and choroid from previous stimulation during the heat, glare, and business of the day, when exposed to the brilliant moonlight of the tropics, are not permitted any exposure, has been altogether attributed to lunar light.

Exactly the same condition often results, especially in the arctic regions, from exposure to the glare from snow. But as in the northern latitudes at particular seasons, there is no rest for the eye, no period of darkness, no coloured objects to relieve the dazzling white; snow blindness, unlike the malady when due to other causes, is frequently attended with considerable irritation and pain, (Hall) often terminating in profuse lachymations and acute opthalmia (Cayley.)

The state of the general health has much to do with the occurrence of any form of *Amblyopia*. The naturally weak and feeble, and those debilitated by long journies, hard work, poor diet; also persons suffering under confirmed or latent scurvy (the latter a condition very frequently present, but unsuspected) are, *cæteris paribus*, most likely to become affected.

The treatment of these cases consists in attention to the general health and prevention of exposure to the exciting causes. Blisters behind the ear, or on the temples, have been recommended, but are rarely beneficial. A similar remark applies to leeches. Tonics are always required. But the most important means of cure is confinement during the day in a darkened room. I have found this plan perfectly successful within a week, and it is highly recommended by others. Exercise should be taken in the dark, and companionship provided for the patient to as great an extent as possible.

horse-hair net, enclosed in a tough gimp wire," when not used to be concealed in the hat. Cayley mentions the inhabitants spectacles made of horse-hair. The wooden spectacles of Greenlanders, presenting only a minute aperture, thus preventing the entrance of much light on the retina, are also well known. For the glare of the Indian sun, I am inclined to think, blue glasses

BELLADONNA AN ANTIDOTE TO OPIUM.

By J. E. S[illegible].

Formerly, Indian Medical Service.

That belladonna, or its active principle atropine, is antagon- as well as the converse proposition, has been exemplified occasionally in practice; yet cases have not been sufficiently established fact.

The idea was first propounded to me, in a paper published by Dr. Thomas Anderson, so long ago as 1854, and I have, from time to time, seen the question touched upon in the medical journals. Amongst those that I am now able to refer to, at Lahore, however, I find only a very few papers bearing upon the point. Two cases of opium-poisoning, treated by belladonna, are related by Dr. Morris of Pennsylvania. (See Braithwaite's Retrospect, Volume XLVII, page 377). In one of these, very large doses of extract of belladonna were given, the whole amounting to fifty grains. The quantity of morphia taken was enormous. The patient recovered.

In the second case, one ounce of laudanum had been swallowed. The pupils did not dilate till 17½ grains of belladonna had been administered. This was the only obvious effect; and the patient died. In both of these cases, emetics were used before the belladonna. Of belladonna poisoning treated by 1864, page 386, a case related, under the care of Dr. Frazer, at the London Hospital, in which ♏20 of tincture of opium twice administered, was sufficient to counteract the influence of about half an ounce of belladonna liniment that had been swal- evacuated by an emetic.

In the *Lancet* of 8th May, 1869, page 657, another successful case is related by Mr. Borlase Childs. In this, ♏30 of tincture of opium, twice administered, completely counteracted the poisonous effects of six grains of extract of belladonna. Neither emetic nor stomach pump was used in this case. I am sorry that I cannot lay my hand on Dr. Anderson's paper. From Mr. Child's case, in which none of the original poison was removed from the stomach, it appears that one drachm of the tincture of opium, equal to four grains of opium, proved an effective antidote to six grains of belladonna.

In determining how much belladonna is necessary in opium-poisoning, the cases alluded to do not assist us much; but, that it may be given in doses that would otherwise prove rapidly fatal is, I think, obvious.

Though I had borne Dr. Anderson's suggestion in mind ever since I read his paper, no case had come before me in which I felt justified in adopting a new and as yet uncertain remedy, until a few days ago. The following is the history of the case: A boy æt. 7, suffering from ascites due to liver disease, had been given some tincture of opium to quiet restlessness. The quantity was said to have been very small, but the precise amount could not be ascertained. The laudanum was administered at 4 a.m. on 7th July; at 7 he was seen by the house-surgeon of the Medical School Hospital at Lahore, who found him deeply comatose, the pupils contracted, the face livid, the pulse almost imperceptible, the breathing difficult and stertorous. He could not be roused, could not be made to swallow, and no reflex effect could be produced in any way. The house-surgeon dashed cold water in his face, and placed some students at the bed-side, to strike continually the palms of the hands and soles of the feet. In this way the circulation improved, and the lividity

cult as ever, and was accompanied by a great deal of rattling in the throat, due to accumulation of mucus, which excited no coughing, and could not be displaced. In this condition I saw the boy at 8. It appeared to me that the house-surgeon had rightly judged, that to introduce the stomach pump would be dangerous in a case that had gone so far, and, indeed, as to removing the poison by its means, this of, course, was impossible, as the opium had been given at 4 a.m. in form of tincture. I therefore ordered the boy an injection of eight ounces of infusion of tea and a little rum; but, finding no improvement, I determined to try atropine. At 9 o'clock, therefore, I injected 15 minims of solution of atropine (grs. iv and ℥i) into the rectum, in half an ounce of tea. This contained, of course, $\frac{1}{8}$ of a grain of the alkaloid. I also dropped a little of the same solution into the left eye, and one drop into the mouth, and this was repeated into the eye and mouth once during the next hour. The right eye was reserved for watching the constitutional effect of the remedy. The clapping of the soles of the feet and palms of the hands was continued for sometime; but as neither this, nor pinching, pricking, nor any other kind of stimulus was in the least degree noticed by the patient, it was discontinued about half past nine. The left pupil dilated rapidly and fully, under the influence of the drop of atropine, and at 10 it became obvious that the right one was slightly larger than before. It was now observed that, on putting the finger into the mouth, a very feeble effort was made to close the teeth upon it, but, to every thing else, the boy continued as completely insensible as before. The pulse was very small and rapid, but distinctly felt; the extremities were warm. At 11 a.m. the right pupil was more dilated, the pulse had improved, but the breathing was the same. At half past twelve the injection, containing $\frac{1}{8}$ grain of atropine, was repeated, and at 2 p.m. the right pupil was fully dilated, the pulse had still further improved, but the breathing was the same. At 3 p.m. a nutritive enema was administered, consisting of eight ounces of milk and half an ounce of rum. I saw him again shortly afterwards. His pulse was now tolerably good, though rapid, and a slight reflex effect was noticeable on touching the eye ball, or tickling the sole of the foot. At 6 p.m. he was decidedly better. He occasionally moved his limbs a little; and though there was no very distinct evidence of sensation, on pricking, pinching, &c., yet he certainly felt and resisted the passing of the catheter, which was now used to draw off the urine, as he had not passed any the whole day. There was slight pyrexia.

At 8 p.m. another nutritive enema of milk was administered, but it was thrown away again immediately, thus affording further evidence of restored reflex action. All the other enemata had been retained. At this time the boy could speak a little, partly answered some questions, and opened and shut his eyes. At 10 p.m. he was able to swallow, and was freely fed with tea during the night. At 11 he appeared to be well, and answered questions plainly. He was a little feverish however, but even this had ceased by 2 a.m., on the 8th. At 3 a.m. he said he was hungry, and took some milk. At 6 a.m. he seemed to be quite well, but the tongue was dry, and both pupils were dilated; there was no other obvious effect of the atropine. The boy was restless and peevish, but the father said this was habitual to him, and it must be remembered he was suffering from ascites. On the 9th the right pupil was no longer dilated, though the left was so. The following day he was taken away by his friends.

In this case, $\frac{1}{4}$ of a grain of atropine was administered, without any symptom [illegible] from an extreme [illegible]. We can hardly believe that so powerful a medicine had no influence, and are almost driven to the admission that its poisonous effect was counteracted by the opium; in fact, that the two poisons were mutually antagonistic, and neutralised each other. This point, however, can only be satisfactorily proved by an accumulation of evidence, though it is very strongly supported by the crucial test of Mr. Child's and Dr. Frazer's cases. Thus, much, however, I think, must be admitted from the evidence of my case, of Dr. Morris' of Pennsylvania, and, I believe, also of Dr. Anderson's, though I have not his cases here to cite, *viz.*, that the system, under the influence of opium, has a great tolerance for belladonna, and, therefore, that it may be carefully administered without danger; so that the road is at once open for further investigation.

An antidote that acts powerfully in a concentrated form is surely a great desideratum, for at best the ordinary antidotes to opium, such as tea and coffee, are bulky, difficult to administer, and, withal, not very satisfactory; while cases like mine must occasionally occur, in which the stomach pump cannot be used, and swallowing is impossible. From this case it would appear that, if the circulation continue, even though feebly, the atropine acts very well given by the rectum. With equal propriety, of course, it might have been sub-cutaneously injected in smaller quantity; and, had the circulation been still feebler, doubtless, this would have answered best.

HINTS IN PRACTICE.

By Dr. Baillie,

Surgeon, Calcutta Native Hospital.

I.—ICE IN CHLOROFORM ACCIDENTS.

In cases of syncope from inhalation of too large a quantity of chloroform, there is no means upon which I should more rely to restore the movements of respiration, than the introduction of a *good-sized lump* of ice into the rectum. This is much more easily effected than one would suppose: a little pressure with the ice being made over the sphincter causes it to relax, and the ice slips in, followed almost instantaneously by a prolonged inspiration, the precursor of natural breathing, and restoration of the heart's action. This measure, but with a *small* bit of ice, would, doubtless, answer equally well with still-born children.

II.—BURNT ALUM IN FUNGUS TESTIS.

Instances not unfrequently occur in this complaint where either the patient objects to submit to Syme's operation, or where it and pressure have failed; in such circumstances, I have seen the happiest results follow the treatment below indicated.

If the testicle be much constricted by the surrounding tissue, this should be first divided by a few stellar incisions; then the testicle and parts divided are to be thickly covered with burnt or desiccated alum, which may be retained over the parts by strips of soap plaister, and over this a carefully applied bandage. Daily dressing is required; the loose alum should be removed and fresh applied, and well pressed down, and that which adheres and cakes must be allowed to remain till it falls off, when it may be renewed; in addition to this, it is well now and then to pour tincture of iodine over the salt; nor should constitutional treatment be omitted, such as generous diet and the preparations of iodine with iron, &c. The cure is generally complete in three weeks or a month, but where the protrusion is very great, double that period may be required.

III.—AT WHAT POINT IS IT BEST TO OPEN THE KNEE JOINT FOR THE REMOVAL OF PUS?

This question, although seemingly a trifling one, is, I believe, of some importance, both as regards the result of the operation and the future movements of the joint. Of course every surgeon would avoid, if possible, incision or perforation of tendinous or ligamentous structures; but it is, as regards the opening *in the* [illegible] that I would wish to direct attention. If the [illegible]

with the least possible interference with the joint.

IV.—EXCISION OF SUPPURATING OR DISEASED GLANDS IN THE GROIN.

discharging ichorous matter, the patient reduced almost to a skeleton, and suffering, in all probability, from hectic, but signs of tuberculosis absent; still not unfrequently in a dying state,

more or less, of the chain of inguinal lymphatic glands, arising generally in this wise: a gland, from the irritation, it may be,

it or makes an insufficient opening into it, and there being no proper vent for the discharge of matter, it burrows and forms

involved and inflame, suppurate, and losing their glandular

her best to cast off; but the process, if left to itself, is extremely tedious, frequently bringing the sufferer, as I have before noticed, to the brink of the grave, if not even to death. In such cases, the application of iodine or its internal administration is worse than useless: it merely serves to prolong the mischief,

is to introduce a grooved director into the most depending opening, and slit up the skin, so as to admit the left fore-finger, which is then to be used as a living director, and inserted with moderate force into the various sinuses, which are to be freely laid open with a pointed curved bistoury, by which means all the glands of the part are exposed. These are then examined in

perish, are removed by passing the finger round and under them, crushing, as with an ecraseur, any thing like a neck by which they may be retained. Scarcely any hæmorrhage follows the

The subsequent treatment consists in regularly dressing the wound, and keeping the patient in the *horizontal* position, thus preventing flexure of the thigh on the pelvis, till granulations fill the inguinal hollow, which process may be expedited by the occasional application of tincture of iodine to the remaining exposed but healthy glands and granulating surface.

V.—HYPODERMIC INJECTION OF MORPHIA IN THE VOMITING OF PREGNANCY.

Of all the means I have tried, this has proved the most successful for relieving the excessive sickness which occasionally occurs during pregnancy, and which so often baffles our endeavours to check it.

repeated after one, two, and three hours' interval, till relief occurs; sometimes one injection proves sufficient, but generally

required. Several native practitioners in the town have been

effects.

VI.—DIVISION OF SPHINCTER ANI IN RECTAL ABSCESS

of subsequent fistulæ. The muscle should be divided at the time

always explore the abscess and search for sinuses, the sphincter can then be put upon the stretch, and easily divided. I

CASES FROM PRACTICE.

CASE OF SLIGHT INJURY OF THE HEAD FOLLOWED BY BLOOD POISONING AND DEATH FROM CARDIAC APNŒA, IN AN ENGLISH CHILD AGED 4½ YEARS.

By Dr. Fayrer, C.S.I.

sidered to be in his usual good health and spirits, but the native

ate well, slept as usual, but he was naturally a restless child at night.

Mrs. —— says that she noticed, when playing with the children, occasions, reply to questions; she thought it odd, and mentioned it to her husband. He was quite well in the evening, called to see him and found him restless and feverish; she to sleep. After this he became more feverish and was sick. restless, and light-headed, and there was a peculiar twitching mother's room. He had a calomel powder and quinine given, skin was hot; his pulse was quick and rather weak; the pupils were dilated; and he had a peculiarly unconscious stare. I immediately examined the head, and found the occipital the first time of the accident. My thoughts were immediately of black court plaister was removed from the wound, and a drop or two of healthy pus made its exit. The wound itself was about the size of a split pea, and looked quite healthy,

The scalp all round the wound from the upper occipital curved line to the neck was swollen and œdematous; it was boggy, but *not red*; no erysipelas had as yet supervened. I it was thickened and infiltrated, but no positive evidence of the presence of pus existed. I observed that the respiration was much hurried.

The symptoms rapidly became worse; the delirium and muscular convulsions increased; and the limbs soon began to be violently convulsed. He rejected all that was given him. The respiration became excessively hurried, 80 in a minute; pulse very feeble and irregular; head rather hot.

Air entered the lungs freely; but apparently the pulmonary He was quite unconscious; eyes staring; pupils widely dilated; red.

I had applied a poultice over the wound and swollen parts; given frequently; and the enema to be repeated. Stimulants were now freely given by mouth and rectum with quinine. benefit resulted beyond the occasional slight raising of the

The cause of death here was evidently cardiac apnœa, due to the formation of coagula in the right cavities of the heart. The origin of the septic condition that induced this can only be attributed to the mischief which had insidiously supervened in the occipital region. It is very remarkable that it should have manifested itself so late after the accident, and that it should have proved so rapidly fatal. The swelling of the scalp was not noticed until I accidently put my finger on it in examining his head, and there is every reason to believe that it was quite of recent occurrence.

For a moment the question of the trephine was suggested, on the supposition that pus might have formed between the bone and dura mater. But the evidences of constitutional mischief were so marked, and the chance of relief so very faint, that it was at once abandoned.

The body was examined on the 23rd July, about 14 hours after death. The back and other parts of the body were already much discolored by suggillation.

Head.—The scalp was reflected; all round the wound it was thickened and infiltrated with a dark red serum; probably partially purulent fluid. This occupied an area of an inch in each direction: beyond this and down to the neck it was infiltrated with yellow turbid serum. All this part of the scalp was œdematous. The wound itself was healthy, and reached nearly, not quite, to the pericranium, which was therefore unwounded.

The pericranium, though, was detached from the bone for about a square inch, corresponding to the site of the superjacent wound. The bone was bare, but did not appear dead. The bones of the cranium were healthy; the section revealed no suppuration in the cancellated texture.

The longitudinal and other sinuses were distended with blood and contained coagula.

The brain was much congested on the surface; the vessels between the convolutions were engorged; the surface of the base, especially over the wound, was slightly ecchymosed under the arachnoid. There was no indication of any arachnitis; nothing suggestive of tuberculosis. The brain substance, when cut, was not congested; the ventricles were normal; the membranes were also healthy.

Thorax.—The lungs were pallid, almost blanched, except just at the back. They contained little or no blood, but some air.

Heart.—Pericardium natural; heart firmly contracted; the right auricle and ventricle contained a peculiarly tough decolorized fibrinous clot, which was firmly wedged in the auriculo ventricular opening. It did not extend into the pulmonary vessels; but it did worse by obstructing the pulmonary circulation at the very outset. There was also a small quantity of *post-mortem* clot in the right ventricle, and also in the left cavities of the heart. The pluræ were natural.

Abdomen.—Viscera healthy.

ON THE USE OF PETROLEUM OR EARTH-OIL AS AN ANTISEPTIC IN THE TREATMENT OF SURGICAL DISEASES.

By Dr. Fayrer, C.S.I.

I have recently been using petroleum, as an external application, on the antiseptic principle, in the treatment of [illegible] surgical cases, and I subjoin a brief abstract of a few of those so treated, which, I think, so far warrant the conclusion that it has been applied with benefit; as it possesses some, if not all, of the advantages assigned to carbolic acid in this purpose. The petroleum in question was kindly supplied to me by Mr. Goodenough of the firm of Messrs. Mackillop, Stewart and Co., and is a dark oily looking fluid, with a peculiar [illegible] and unpleasant [illegible]. It struck me that this hydrocarbon might be as efficacious as carbolic acid for [illegible] purposes; and as it is procured in this country and in Burmah it might be obtained in large quantities and at a much less cost than carbolic acid, and I have accordingly [illegible] the experiments now in which I engage for [illegible] purposes. The present [illegible] as this petroleum [illegible] to the best [illegible] application of the [illegible] principle of preventing the air that obtains access to the affected surface. This petroleum is produced, I am told, in large quantities in Assam; and [illegible] is [illegible] [illegible] [illegible]

CASE IX.

[illegible] admitted [illegible] May 1869, [illegible] [illegible] [illegible]

On the 11th May I went to Jullundhur, and with the aid of Dr. Warburton, the Civil Surgeon, Dr. Vercherc, of the 13th Native Infantry, and Dr. Tolmie, of Her Majesty's 92nd Highlanders, I removed the entire tumour. With regard to the steps of the operation there is little to tell, which would not suggest itself on looking at the above sketch of the patient's appearance. He was first put under the effects of chloroform, and the operation was commenced by removing the first bicuspid tooth of the left side. The cheek was raised by first making two incisions, one commencing from the middle line and carried upwards along the right side of the nose to a level with the orbit, the other from the angle of the mouth to a little above the expanded arch of the zygoma. The divided facial artery was then tied (the only artery that required ligature during the whole operation), and the cheek dissected up to a level with the terminations of the two incisions. The zygomatic arch and the point of junction of the malar with the frontal were then divided by the saw. The hard palate was divided by a strong pair of scissors, but only back to within a little distance of its junction with the soft palate, in order that the palatine process of the palate bone might be saved, if possible. The nasal process of the superior maxillary required no division whatever; and the cause of this will be presently explained. The whole mass was now quite moveable, and little downward pressure was required to displace it entirely from its bed. The margin of the orbital plate of the maxillary was included in the tumour and came away with it. No forcible separation from the nasal bones was required. The soft palate was carefully looked to, and it, along with apparently the whole of the palatine process of the palate bone, was preserved entire. There was no hæmorrhage while the mass was being removed from its bed, and no stoppage of bleeding by means of actual cautery was required throughout the whole operation. A plate of bone, apparently a part of the orbital plate of the superior maxillary, and doubtless the small orbital process of the palate bone, were left for the support of the orbit. Their structure appeared quite healthy, and their preservation was very desirable. The cavity thus left was cleaned and partially filled with a few folds of lint soaked in a dilution of Condy's Disinfecting Fluid. The cheek, which had of course been held up during the separation and removal of the tumour, was replaced and reunited at its borders by wire suture, and a single piece of lint soaked in the same solution placed over. The time occupied by the operation did not extend over twenty minutes. I left the lad under the care of Dr. Warburton.

After-treatment and progress.—At 10 p.m., four hours after the operation, a grain of opium in an ounce of camphor mixture was administered.

12th.—Slept well during the night. Parts cleaned externally with a fresh piece of lint, and solution applied. No hæmorrhage from the wound. Sightly feverish early in the morning, and more so towards afternoon. Diaphoretic mixture ordered.

13th.—Did not sleep well during the night. Skin still hot. Pulse hard and rapid. Lint removed from the cavity, and fresh lint soaked in diluted Disinfecting Fluid again introduced. Bowels opened. Continue Diaphoretic mixture.

14th.—Slept well during the night, bowels moved once. Has slight fever. Continue mixture.

15th and 16th.—Still slight fever.

17th.—From this date to the 7th of June the patient improved steadily. The parts healed mostly by the first intention, except near the lip, where a slight tendency to sloughing appeared, but was soon checked. On the 19th, the ligature was removed from the facial artery and the lint taken out of the cavity, in which a healthy granulation was very apparent. It was cleaned out daily by syringing with Condy's Disinfecting Fluid.

7th June.—Discharged quite well.

About a week after the date of his discharge, he presented himself at the Loodiana Dispensary and described himself as quite free from pain or uneasiness. The nose had fallen back very considerably towards its natural position. The right eyelids were as widely apart as the left. The cavity appeared gradually filling up with healthy granulations. He could articulate so as to be readily understood by those about him.

REMARKS.—The tumour in which the entire maxillary bone, with the apparent exception of a portion of the orbital process, had been replaced by fibrous structure. In its general and microscopic structure there is no departure from the ordinary characters of fibrous tumours, which are common to this as well as to other bones of the face. The tumour had not its origin in the antrum, which is enlarged and contained a large quantity of serous fluid, retained there by obliteration of the opening which, in the natural condition of the parts, communicates with the middle meatus of the nose. The mucous membrane of the antrum is very much thickened and is the only structure forming its wall, if we except the portion of the orbital process which forms its roof in the natural state. None of the surrounding bones appeared at all affected, and indeed the generally smooth surface of the tumour leads to the belief that they have escaped.

A solitary instance of success in a case where the disease had attained a very formidable dimension, scarcely entitles me to speak with confidence of future successes in operations of the same kind. Yet I cannot help stating that the operation is neither so difficult nor so hazardous as one would be naturally led to anticipate, and, judging from my own feelings of anxiety before I undertook to perform it, I am inclined to believe that the formidable appearances which these tumours often present, the dread of uncontrollable hæmorrhage, and an over-estimate of the difficulties attending the operation generally, have led to many deferred and abandoned attempts.

THREE CASES OF TYPHOID FEVER.*

BY ASSISTANT SURGEON A. DOIG,
79th Highlanders.

[*Communicated by Dr. W. Munro, C. B., Deputy Inspector-General of Hospitals, H. M.'s Forces.*]

PRIVATE JAMES MUIR, 92nd Highlanders, age 26, service eight years, time in India 1 year, married, was sent up from Jullundur as one of the convalescents of the season. At Jullundur he is said to have had repeated attacks of fever, which so debilitated him, that a change to the hills was considered necessary for his recovery. He arrived here on the 16th April, and was on that day admitted to hospital. Then he was suffering from fever daily, with but slight intermissions. The form of fever is described as remittent. His general state was very low, and tongue and mouth covered with sordes. No further statement of his symptoms is given at this period. He was treated with quinine in full doses, and stimulants were given. On the 22nd April he is stated to have been very low and feverish, and an inflammatory swelling on right side of the neck male its appearance, which suppurated, and was incised on the 27th of the month. On the 28th April he is described as improving; no fever present; and the abscess discharging healthy pus. On the 3rd May the febrile symptoms appear to have returned, and he was in a low drowsy state with delirium at night.

On the 12th May he came under my charge. He was then suffering from a low typhoid form of fever. He was in a dull listless sort of state; had to be spoken to in a loud tone before he would answer questions. Skin had a dusky sallow hue, and was hot and pungent. Tongue brown and furred, a little sordes about mouth; pulse rapid and small, 115; slept well during the previous night; had no delirium, but most profuse sweating. There was no diarrhœa or tenderness of abdomen. Bowels were stated not to have been opened for three days; there was no eruption. Quinine, beef-tea, and wine were ordered. In the evening pulse was 118; skin very hot and pungent; had a drowsy, stupid look; bowels moved once during the day; motion loose, entirely feculent and of natural colour; no tenderness of abdomen.

May 13th, Mane.—In a very low state; wandered a little during the night; had most profuse sweating, his whole bedding being saturated; was in a dull, drowsy state; skin dusky, very hot and dry; pulse 120; bowels moved twice during the night; motion had a greenish colour, and was about the consistence of pea-soup. There was a little tenderness and gurgling on pressure over left iliac region. No eruption present. Another small abcess on the left side of neck burst during the night. Quinine, beef-tea, and wine continued.

Vesp.—General state much the same as in the morning; bowels moved twice during the day; motion of the same colour and consistence as that passed during the night, but contained a little mucus; abdomen slightly swollen and tender all over; pulse 118; tongue and mouth very foul.

May 14th, Mane.—In a very low state; could with difficulty be roused to answer questions; pulse very feeble, 120; bowels moved once during the night, motion of the same character; motion; had again most profuse sweating during the night.

Body much emaciated; skin of a dusky colour; two abscesses, one on either side of neck, both open. *Chest.*—Lungs collapsed; healthy. *Abdomen.*—No signs of peritonitis; bowels distended with gas. *Duodenum.*—Mucous membrane congested, and discoloured in patches; no ulceration. *Ileum.*—Mucous membrane healthy, except in its lower fourth, where it was extensively congested, and of a purple colour. There was no ulceration and no disease whatever of Peyer's patches or solitary glands. *Large Bowel.*—Mucous membrane of cæcum congested. On its surface was a triangular cicatrix, evidently of long standing from its pale hard texture. Mucous membrane of ascending

another old ulcer of circular shape. Transverse colon of a purplish colour; very much congested, and the solitary glands filled with a greyish white deposit. There was no ulceration. The descending colon presented the same appearances, only that the glands contained more deposit, and were visible in greater numbers; low down close to the rectum, the mucous membrane

Private J. Taylor, 92nd, a florid healthy looking man, admitted

On 16th May disease changed to typhoid fever; was in a low typhoid state, great prostration; quick weak pulse; foul tongue; great thirst, restlessness and general uneasiness.

May 17th.—Much worse; a few spots seen on abdomen.

18th.—Diarrhœa set in with abdominal tenderness; pulse 120, feeble, heavy, and listless. Ordered brandy and bark and ammonia.

19th.—Passed stools in bed; pulse very weak and small; wandering delirium during night; listless; not easily roused. Brandy, &c., given.

24th.—Passing large quantity of blood in his stools, which are passed involuntarily; great abdominal tenderness; low restless delirium; sedative enemata. Brandy and beef-tea, &c., ordered.

sionally passed involuntarily.

tenderness, expressed desire for food.

June 6th.—On the 4th June abdominal tenderness returned; and on the 6th he is described as being in a very weak state, two in 12 hours, natural in colour. Beef tea and stimulants given.

7th.—Wandering in his mind all night; in a very weak state.

unsatisfactory condition, but nothing is mentioned as to the state

16th.—Only very slight abdominal tenderness remaining.

21st.—Very much better; pulse 78, tongue clean, skin cool and moist.

convalescent.

1868, with fever of an intermittent type. About the 8th May

coloured spots over belly and chest; is sensible, but deaf; com-

18th.—Three stools in 24 hours; deafness very great.

20th.—Eruption faded; sleeps a great deal; but easily roused and sensible.

21st.—Looks heavier; stools two in 24 hours; little or no tenderness in the abdomen, pulse 80, weak. Brandy and beef-tea every hour.

22nd.—Drowsy; pulse 76; skin cool and dry; slight tender-

26th.—Had improved a little; was livelier and more easily roused. Brandy, beef-tea, &c., continued.

28th.—Beginning to pull round; great difficulty in getting

31st.—Very much better; no pain or tenderness of abdomen; skin cool; pulse 78, stronger; hearing much improved. From this date he did well; was able to sit in a chair on the 16th June the abdominal tenderness continued up to the 20th June.

During July he progressed slowly but steadily.

THREE CASES OF ICTUS FULMENIS WHICH OCCURRED DURING THE LATE HAZARA CAMPAIGN

By Surgeon F. Carter,

commence of the mountain, three men lay asleep parallel to

Though they all described the feeling on being struck, as a

or more. The officer in command of the picquet, and all their

the same to me, consequently I did not see them till the

ciently disprove it. The rapidity with which the burns healed,

CASE I.

and bared of skin; the burn then turned round to the front lower

lined, which he also wore, was torn in several places, but showed no signs of having been burnt. The clothes he wore were: 1st, regimental coat, which was rent up the back in several places; 2nd, two light under shirts also rent up the back; 3rd, pyjamas rent down the left thigh. None of these showed any signs of having been burnt, nor was any cloth deficient. The burns were dressed, and the man forwarded to the Field Hospital at Oghee.

October 23. Camp Oghee.—Readmitted to regimental hospital tents much reduced in strength and weight, considerable foul discharge, as might be expected from so large a raw surface, and two large patches of rather deep sloughs in process of separation. No part of the burn has yet begun to heal. Ordered tonics, brandy, and morphia at night. To be dressed with calamine ointment. The burn now healed very rapidly, and under the influence of good food, &c., and scrupulous attention to cleanliness, his health rapidly improved.

November 17.—Perfectly well; with the exception of slight contraction of the left thigh; leave for three months.

CASE II.

Jewant Sing, sepoy, No. 1 Company, age 25, healthy. The whole length of the back of the left thigh was severely burnt; he was not insensible so long as the other two. Bayonet struck in three places, presenting the same appearance as in the former case; brass end of bayonet case struck in one place. The clothes he wore were: 1st, choga (cloak), which was spread over him, was rent and torn in several places up the back; 2nd, coat and shirts, neither of them touched; 3rd, pyjamas rent and torn in front and down the left thigh; 4th, puggree torn in several places. No signs of having been burnt were apparent in any of the clothes, nor was any cloth deficient. Dressed and sent to Field Hospital, Oghee.

October 23, Camp Oghee.—Re-admitted to regimental hospital tents; showed scarcely any constitutional disturbance; the burn was very painful, and a considerable slough was in process of separation; much foul discharge. Tonics and brandy; dress with carbolic acid, one part to seven of linseed oil. This however did not seem to suit it, and was afterwards changed for calamine ointment. After the separation of the slough the burn was slow of healing, and was not complete till the 10th of January, 1869.

January 12.—Leave to proceed to his home for three months; the burn is quite healed; there is slight contraction of the leg, but not more than will, I think, be easily overcome by time and gentle use.

CASE III.

Chanda Sing, sepoy, No. 1 Company, age 30, healthy. The burn extended all over the back from the shoulder to the loins and slightly down both thighs; it was mostly superficial, but here and there were deeply burnt. The leather of the cartridge box, which he wore, was rent in several places, chiefly down the stitching, and the tin-lining of the compartment containing the caps was struck and bent. Bayonet struck near the point, and a piece of the wooden stock of his musket was clipped off. There were no signs of burning. The clothes he wore were: 1st, choga (cloak), which was spread over him, rent up the back in several places; 2nd, regimental coat rent and torn in several places up the back, and showed no signs of having been burnt on the edges of the rents; 3rd, two under shirts rent completely up the back, no signs of burning; 4th, pyjamas rent down the left thigh, no signs of burning; 5th, regimental trousers in which he had been wounded were rent, and showed signs of burning over left thigh and right leg. Dressed and sent to Field Hospital at Oghee.

October 23, Camp Oghee.—Re-admitted to regimental hospital tents much reduced in strength and weight; considerable foul discharge, and over the back were three patches of sloughs in process of separation. Ordered tonics, brandy, and morphia at night. To be dressed with calamine ointment; sloughs soon separated, and the healing was very rapid. His health soon improved, and, on the 17th November being quite well, was allowed to proceed to [illegible] on three months' leave.

CHRONIC ARSENICAL POISONING—COMPLETE RECOVERY.

By A. S. G. Jayakar, L.R.C.P., F.R.M.S., London.

It rarely falls to the lot of the Indian practitioner to meet with cases of chronic poisoning by arsenic. This may be due principally to the large quantity of arsenic which is generally either administered or taken for homicidal or suicidal purposes in this country. Amongst the symptoms which make their appearance gradually after the administration of the poison, those in connexion with the nervous system are not very common. On the contrary, a medical man is often thrown off his guard while trying to discover the cause of such symptoms, as the notes of the present case will fully illustrate.

Foola Mona, a cultivator, aged 35, was admitted into the Hutteesing Hospital, Ahmedabad, on the 8th of February, 1869, with an extensive fungous disease of right foot, which presented a number of sinuses on its front aspect, discharging a copious quantity of black fungoid matter. On his admission, he complained of anæsthesia of both the hands, which was then supposed to be due to the commencing stage of lepra anæsthetica. The fungous disease itself was of 12 years' standing, having arisen in a local injury to the sole of the foot caused by a stone. His right leg was amputated the day after his admission, about three inches below the tubercle of the tibia. The stump progressed very satisfactorily, excepting an attack of secondary hæmorrhage which he had on the night following the operation. On the 14th of February, the anæsthesia in the hands having increased, I directed more attention to that symptom. The hands were found partially paralysed, and the flexors of the fingers strongly contracted. On going more carefully into the history of the case, it was discovered that, two months before his admission into the hospital, he had applied to a *Hakeem* for the cure of his foot. The *Hakeem* had applied a poultice for about a week, containing nearly three ounces of arsenic and an incredible quantity of cayenne pepper (7 lbs). This having given rise to constant vomiting and purging, the arsenic was omitted after the second application. It was followed by a burning sensation all throughout the body, which continued to be present after the operation in the extremities, the stump not excepted. The symptoms in the hands made their first appearance a fortnight after the last application. The patient was ordered to take potas. bromide, gr. xii, tinct. bellad. ♏xiv, sp. chloroform ♏xxx, aqua comph. ʒiii, ʒi. thrice daily. Under this treatment he went on gradually improving, the stump soon healed, but the nervous symptoms remaining, the treatment was continued till the 17th of April; when he was discharged cured.

CASE OF LOCOMOTOR ATAXY.

By Assistant Surgeon B. Evers,

18th Native Infantry.

Locomotor ataxy is, in my opinion, a disease that is much more common in India than is generally suspected. In almost every case, the patient complains of "shooting pains" in the extremities, and the disease may be mistaken for rheumatism. This in the early stage of the disease, but when the symptoms have progressed so far as paralysis, the case again is returned as one of pure ordinary *motor* paralysis under the head of paraplegia.

The following are the particulars of a case, that was reported by me to the Deputy Inspector-General of Hospitals of the Allahabad Circle, in April last.

A [illegible], aged 28, a sepoy in the 18th Native Infantry, was admitted into hospital on the 23rd March, 1869, complaining of slight difficulty in breathing, slight palpitation, and great weakness in the lower extremities, with a sense of tingling when the feet came in contact with the ground, that same kind of feeling which one experiences on attempting to walk, when the foot is known to be "asleep." The patient's legs trembled under him when he stood. I have seen cases of extreme tremor in the extremities induced by excessive tobacco-smoking; and thinking that the man might have indulged too much in that way, I took measures to prevent his [illegible]. The symptoms and [illegible] disappeared in a few days, but the patient still complained of increasing weakness in the legs. The limbs were well developed, and the muscles all appeared quite healthy. He [illegible] much know where he stood. On his attempting to walk, I observed that there was a certain amount of [illegible] was examined, but the [illegible] *co-ordinating* power was lost. His gait, on attempting to walk with his eyes shut, (although attendants were by to support him in case of necessity) became very staggering indeed. He required to *see* his legs that he might *direct* them. Not the [illegible] Intellect quite clear.

region of the spine, &c., clear it of all suspicion of myelitis. It does not appear to me to be that disease: in beriberi the gait is [illegible] has been known to produce paralytic symptoms, but if his food [illegible] legs "failing" them long before they apply for treatment, and ascribe the feeling simply to being tired, not noticing how much sooner they are fatigued than other people. In this particular case, I am inclined to think that atrophic changes must be going on in the centres of volition, and that those changes are due to some syphilitic lesion.

At first I treated this patient with strychnia, but finding little good result, I then put him on small doses of calomel, applying at the same time a blister over the sacrum. I subsequently put him on the ergot of rye. He seemed to be improving [illegible] hospital. I have not heard anything of him since.

CASE OF INSIDIOUS DYSENTERY.

By Dr Mathew.

Civil Surgeon, Darjeeling.

[illegible] of April last, I was requested by letter on the case of Mr. C., a tea planter, resident close to the Darjeeling [illegible] about 1,000 feet. His [illegible] from the plains, but has [illegible] the hills. He is about 25 years of age, and never before had any serious illness. He complained of diarrhœa, some tenesmus, loss of appetite, and unwillingness to exert himself. I recommended by letter [illegible] should blood appear in the motions, or should fever supervene [illegible] fully. I could discover no abdominal disease; he complained of some superficial pain, unaffected by pressure, reaching from the last ribs on the right side to the edge of the ilium; his pulse [illegible] and offensive. I prescribed a dose or two of ipecacuanha, opium enemata, and light farinaceous food with port wine. The subsequent [illegible] that the stools were diminished in number, and more wholesome; [illegible] was losing flesh and strength, and could eat nothing, still no history of febrile excitement or rigor. I then advised change [illegible] did not improve there, was recommended to come on to Darjeeling. [illegible] cation. He moved to Kursiong, and after a few days, wrote to say that there was no improvement. The discharge from the bowels had been checked, but he gained no strength; I [illegible] received a note from the friend in whose house Mr. C. had put up, to say, that Mr. C. had suddenly passed from his bowels a large quantity of blood, and was extremely low. I [illegible] desperate condition. He had to be helped to his bed from the bath-room after the first discharge of blood, and as he lay in bed, the sphincter being apparently semi-paralyzed, the [illegible] I found him tossing his hands about, crying for more air; his [illegible] and lips blue. There was not a trace of abdominal tenderness, [illegible] medicine could be. The discharge of blood ceased. I slept [illegible] and though, in other respects, there was little alteration in his state, I felt more hopeful about him. My duties compelled me to go back to Darjeeling, but I returned to Kursiong in the evening, and found that his bowels had been moved only three times during the day. The stools were dark and semi-fluid, but there was no blood, and nothing like the usual discharge of dysentery. [illegible] every four hours, and for food, corn flour, milk, and port wine, [illegible] leave him again; the debility was still extreme, so much so, that I was afraid even to lift him; the respiration was still hurried, and the pulse the same; but the skin was free of cold sweat, and his lips were ruddy. Two days later I saw him again, on receiving a report that he had become delirious. This delirium, [illegible] the result of the hæmorrhage, and made no change in the [illegible] mended slowly. He is now convalescent.

[illegible] the absence of all abdominal tenderness, and, if any, febrile excitement, the fact that ulceration must have gone on without the usual appearance of dysenteric discharges, and lastly the wonderfully rapid success of the ipecacuanha treatment. The involuntary discharge of blood from the rectum is also, as far as I [illegible]

PRIMARY CANCER OF THE LIVER: SECONDARY DEPOSIT IN THE INTESTINES AND PLEURÆ.

By A. Porter, M.D.,

[illegible]

The following case of cancer of the liver is considered worthy of record, as Morehead states the disease to be rare in India:—

Baskhan, Mahomedan, prisoner, Akola Jail, aged fifty years, formerly a sepoy, and addicted to the habit of opium eating, consuming about forty-five grains of crude opium daily, was admitted to hospital on the 2nd December, 1868, complaining [illegible] for the last month. He had noticed a hardness in the abdomen, and had [illegible] months, and he attributed the subsequent fever to the indigestion accompanying the evening meal.

He [illegible] having suffered from many attacks of ague, but from no other sickness. On admission, he seemed a hale old man and in fair flesh. On examination, the liver was found to occupy the whole of the epigastric region, [illegible] the cartilage. At this time the right lobe projected very little beyond the margins of the ribs, but within one month it had increased so much as to reach to the umbilicus.

The surface was hard and nodulated. One of the larger nodules finally became somewhat boggy to the feel, but never [illegible]

[illegible] during life;—neither was there enlargement of the spleen, nor of the superficial veins of the abdomen.

The pyrexial symptoms were slight, the pulse averaging 80 [illegible] 64 and 142 beats the

temperature (in the axilla) averaged 98°·3F. at 6 a.m., 100° F. at 12 noon, and 101° F. at 6 p.m., the highest registered being 102·2F. There was no cough, but the respirations were quickened, being on an average 26 per minute; the extremes were 20 and 36.

There was a white furred tongue with loss of appetite from the first. The stools were natural in colour and consistence till four days before death, when a dysenteric diarrhœa set in. The urine was clear, rather paler than natural, of an average specific gravity of 1015, decidedly acid in reaction. In only one instance was it cloudy from lithates, and of specific gravity 1028. The average amount secreted in 24 hours was forty ounces (nearly), the extremes being twenty, and forty-eight.

Œdema of the ankles, dysenteric diarrhœa and hiccup preceded death, which occurred at 3 a.m. of 1st February, 1869, after an illness of about four months. *Autopsy*, nine hours after death. Body rather emaciated, but of precisely 90½ lbs. the primary weight of the prisoner fourteen months previously. Rigor mortis still present.

The peritoneum contained about two ounces of straw-coloured fluid, but was pearly and shining, and presented no signs of inflammation.

The liver was very large, weighing one hundred and fifty-five ounces, nearly one-ninth of the body weight. It was of a dull, yellowish brown colour, and had its surface studded with elevated yellowish white, moderately firm nodules, varying in size from a hazel nut to an orange. It cut firmly and exhibited sections of similar masses. One was the size of a small cocoa-nut, occupied the whole thickness of the right lobe, and was softened in the centre into a yellowish grumous matter consisting of fatty cancer cells and oil globules. The cancer masses were pretty uniformly distributed, and occupied nearly the whole organ. The intervening tissue was mottled greenish-yellow, the centres of the lobules being green, and the outer parts yellow. The cells of the latter were seen to be fatty under the microscope. The gall bladder was empty.

The mucous membrane of the large intestine was of a slate grey colour, more or less congested on the transverse folds. Some whitish hard cancerous deposits, half the size of a pin's head, were found arranged in irregular lines on these congested folds in the transverse and descending colon; in the sigmoid flexure these deposits were smaller and more universally diffused, and here there was œdema of the mucous membrane.

The lungs were moderately collapsed, and seemed healthy, except that the pleural surface of each was studded with hard cancerous tubercles about the size of a pin's head, at about five to the square inch on the pleurae of the base and fissures, and one or two to the square inch on that of the apex. Some of these appeared as white prominences, others as blood-red spots with yellow centres. Neither pleurae contained fluid. The spleen presented thickening of the capsule over a surface to which the liver was adherent. It was healthy. The kidneys were small and fatty. The brain and other organs seemed healthy.

Answer to Correspondents.

[illegible]

Notices to Correspondents.

[illegible]

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Lancet, Medical Times and Gazette
British Medical Journal
Proceedings of the Sanitary Commissioner, June
Medical Press and Circular
with Report of Bombay Charitable Dispensary

The Indian Medical Gazette.

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Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

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In the Press.

A TREATISE ON ASIATIC CHOLERA.

BY

C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

MESSRS. WYMAN & CO., Hare Street, Calcutta, will be glad to receive early orders for this work, so as to enable them to procure copies from England, immediately on the issue of the Book from the Press.

DRINKING WATER IN BENGAL.

THE fifth report by Dr. F. Macnamara on the analysis of potable waters recently published, shows that, except where drinking water is taken from the main rivers of India, at two or three stations perhaps out of the many, its source and method of supply are alike disgraceful, and unworthy of the knowledge and wealth of the country.

These reports have been publishing during the last two and a half years under Dr. F. Macnamara's superintendence, and we can now ascertain the character of the drinking water in use at fifty stations of the army; we will examine the account in the cantonments of Bengal Proper.

Fort William (Calcutta) is the only station in the Presidency where a water-supply for the garrison (one British Regiment and Artillery and one Native Regiment) is laid on and distributed by mechanical appliances. The surface rain-fall water is collected in two large tanks on the glacis, thence it is pumped into a reservoir high on the ramparts, and from this it is distributed by mains and hydrants throughout the barracks and stables

quantity of fluffy stuff floating in it; viewed in a foot tube, fibres of cotton, wool, linen, fragments of woody tissue, starch, shapes, and all sizes, disported themselves, while many minute white worms wriggled about through the mass."

At Barrackpore, where nature's own reservoir, a hole dug in [illegible] "the water had a most disagreeable smell, was of a very deep color, and yielded to the gallon ·075 of a grain of albuminoid ammonia," while water taken from the river itself yielded but ·008 of a grain of the same substance.

The English standard of purity is ·005 of a grain, and the water at London bridge, when formerly found to contain ·041 of this principle, was denominated "very dirty, vile, and stinking."

[illegible] with that of the old tank on the glacis" of Fort William; we have seen the character of that water *after* filtration.

[illegible] to two causes: "1st, because the water of most of the wells is derived from the drainage of the land on which the station stands; 2ndly, because of the faulty construction and badly chosen position of many of the wells, and the great neglect of [illegible] pollution."

The climate of the Bengal military stations is the most inimi- [illegible] stations of the army, what assistance does wholesome water give to preserve health? What has been said of the above stations might, with very little alteration, be said of all; that either from the source and manner of supply, or the mode of filtering and distribution, there is not one station in the Presidency of Bengal [illegible] soldiers.

The unfortunate "chatty filter" has long been a source of annoyance and quizzing to Dr. Macnamara and his assistants. This very primitive arrangement has long been in use in India; it was in existance in the palace of Akhbar Khan, and we believe Mr. Hunter describes a very similar apparatus in his [illegible] on the necessity of good water, and at last, in 1863, this cheap apology for a filter was ordered to be used in all barracks and [illegible]

Dr. Macnamara has now devised a filter for barrack use; [illegible] from England, a substance that even there is not looked upon as the best medium for filtration. In regiments and institutions, where it has already been severely tested, it is stated to work [illegible] may be drunk with safety, although it is otherwise a deadly poison. But we fear that the filter is too complicated for barrack use. No one, for instance, could be trusted to "fill the filter" according to the complicated details at page liii., and unless the measures indicated for cleansing, airing, and changing the ingredients are ever *carefully* carried out, it will become as inefficient as the present arrangement.

Since the issuing of Dr. Macnamara's report, Government, at the instance of the Commander-in-Chief, has sanctioned an experimental trial of this filter in every regiment stationed in the Presidency Division of the Army, and also at the stations of Allahabad, Meerut, and Mean Meer. The filtering portion is to be supplied by Messrs. Thompson & Co. packed with animal charcoal, and it will be fitted into tubs locally arranged for. It is to be hoped that very strict injunctions will be issued, so that all the instructions for use may be attended to, and that the filter may have a fair trial; it is very necessary also that an officer, skilled in the analysis of water, should test the process at least once in every ten days.

What has the Sanitary Commission been about in all these years that the above disgraceful condition of drinking water should still exist in the main stations of the army. For the last quarter of a century, nay the subject may be traced back 80 years, the Medical Officers of India have been representing to Government the necessity for good drinking water, and trying to procure it for the men under their charge. At last, with the additional pressure of the British Medical Officer, backed up by Sir H. Rose, and urged on by the injunctions of the Royal Sanitary Commission at home, the advisers of Sir John Lawrence impelled him to submit to the expense of a scientific analysis of drinking water all over the country. The medical department wished skilled men to be got from England for the purpose, to do the work quickly and thoroughly, and to have done with it; but Government chose the youngest Medical Officers in the country to perform it at the cheapest possible rate; they performed their duties right well; they worked on minimum pay, and under many difficulties; and the result of their labors is shown in the volume under notice.

If the Sanitary Commission had been honest advisers to the Government, they would have left no stone unturned to get these matters rectified when they first came into power; but to give good water to the men cost money; to recommend measures of expenditure was directly to lose the confidence and favor of the late Viceroy; and so practical improvements and remedies remained in abeyance.

[illegible] Government that good [illegible] Viceroy would not spend the money to rectify it, let us hope that Lord Mayo will.

If he could but examine the foulness of the barrack supply, the filthy *mussuck*, the unkept filter, the drinking utensils, &c., all to be avoided, by properly constructed wells, good pumps, and proper means of distribution, he would not wonder at the irritation it excites in minds who have long paid attention to the subject, [illegible]

WHAT IS CONTAGION?

[illegible]

The real existence as a result of direct transmission is very doubtful. The occurrence of fracture of bone, or extravasation of blood, opposite the part of the skull which has been struck, being rather attributable to the lateralization of vibrations resulting from the varied consistency of the coverings of the skull, the structure of the diploe, and the great density of the vitreous table.

The structure of the interior of the skull also favors lateral vibration of shock, rather than direct transmission; and so adjusted are its provisions that as much injury is to be apprehended from their influence where they meet, after travelling round the skull, as at the part where they were set going. Hence it is that ecchymosis and laceration of the cerebral substance is found at one of these points nearly as often as at the other. Fracture of the base occurs from the same cause; the disturbing influence of severe vibrations, the skull having given way at the weakest point, as any other body of unequal strength at different parts, would, if allowed to fall, or be in any way subjected to violent concussion, break where it was weakest. If this opinion is correct, as the writer believes, it will be seen that the term Contre-Coup is fanciful and unnecessary. That both the opposite fracture and extravasation, or ecchymosis, are the natural results of a mis-direction of what was intended to assist in securing the safety of the contents of the skull, *viz.*, lateral vibration, as opposed to direct impulse or transmission.

THE NAGPORE MEDICAL SCHOOL.

THE second annual report of this institution has lately reached us. It is peculiarly worthy of our notice, for the Chief Commissioner, in March, 1867, forwarding to Government the scheme for its establishment proposed by the Civil Surgeon, Dr. Townsend, remarks that it is prepared on the principles recently suggested in the *Indian Medical Gazette*. Government sanctioned the establishment in the following June, and the first session soon after commenced.

Thirty-three pupils were under instruction, at the close of the last session in April, of whom a large proportion are Mussulmans: by next year the majority are expected to be capable of entering the service of Government as well grounded and educated hospital assistants. English training, also, has not been neglected, for the present superintendent, Dr. Beatson, himself gives instruction in that language three times a week.

The Chief Commissioner, in his review of the year's proceedings, remarks on the importance of cultivating the adherence of the principal race of the Central Provinces, the Mahratta Brahmin; but hitherto attempts to educate them have been a failure. It appears that they object to touch a corpse, except that of a Brahmin; they possess little aptitude or liking for the study of medicine; are very prejudiced, and are incapable of appreciating information. The two men of this class who were present throughout the first session failed even to learn the names of the bones of the skeleton in that time.

The Chief Commissioner gives a hearty acknowledgment to the earnestness of Dr. Beatson's superintendence. The work of the school seems to have been admirably carried out by the three masters, sub-assistant surgeons, one of whom teaches anatomy and surgery, a second, materia medica and chemistry, and the third, physiology and the practice of medicine. During last winter, 24 bodies were dissected, and a demonstrator of anatomy was especially engaged during that time.

There appears, however, to be one great and crying want, not only for the proper clinical teaching of these pupils, but for the charitable mitigation of disease at this station, the head quarters of the Governor of the Central Provinces: there is no proper hospital.

The city hospital now consists of two unventilated and leaky sheds, built end on to the prevailing wind, and, in every way unfit, both from space, position, and structure, for the purpose to which they have been temporarily applied. "The construction of a new city hospital is under the Chief Commissioner's consideration," but the Government appears to have long evaded the expense of proper buildings, although some support has now been promised. There seems still, however, a lukewarmness of the authorities on the subject, which can hardly be understood at this distance, in contrast with the energetic administration of the district generally.

The school certainly is prospering; and if it turns out soundly educated hospital assistants at the end of its third session, it will have admirably fulfilled the want that it was intended to supply.

BOILS.

A RECENT *Indian Public Opinion* has an article upon this subject. He asks if there is no cure for them? no course of diet or medicine that will prevent them? We think not, but much can be done to mitigate them; we believe, however, that they will ever appear in certain skins and temperaments as the result of long continuance of external heat; they are a real local inflammation in fact caused by heat, to be subdued by a few days' residence in a cooler climate. We speak merely of the ordinary and simple form; there are many varieties, some depending on a depraved state of blood from bad food, water, &c.

The article in question thus concludes:—

"Who has not heard the dictum that boils are healthy? A healthy body surely has not so much bad matter to eliminate. It is surely an insult to a man lying sick for eight or ten days with a most painful disease to tell him he is only showing signs of being very healthy. At this season of the year, hundreds all over India, both on the plains, and in the hills, are groaning under this affliction and seeking a cure. Is there no specific for it, nothing to clear the blood or diminish the pain?"

CHOLERA HOSPITALS.

WE understand that arrangements are being made for the immediate erection of a building, near the Medical College Hospital, where cholera cases can be treated separately; and also that a similar building is to be built near the Native Hospital from the private funds of that institution.

Hitherto native cholera patients have been treated in the same wards as other sick, a practice alike painful to their feelings and dangerous to their health. In the regimental hospitals of the British army such a procedure is almost unknown, but space has always been available, and perhaps the principle of segregation has been more recognized.

The difference of the two systems is shown in that since the year 1861, 66 patients (natives) in the Medical College

[illegible] cases of cholera among [illegible] and their families, and [illegible] proceeds of cholera in their system; of these but 3 died.

[illegible] are now definitely laid down as a system by the Government of India: it is now directed that whenever cholera appears in an epidemic form among the general population of military stations, tents or temporary sheds or huts are to be placed in the outskirts of cantonments, and a very liberal establishment is granted for their maintenance.

NATIVE MIDWIVES

[illegible] Inspector of Dispensaries for the year 1867, gives an account of [illegible] therefore, is an enlightened one and well worthy of extension. At a meeting of the committee of the Charitable Dispensary, a [illegible] setting forth the great evil and mortality that resulted in all [illegible] opposite sex. At his suggestion the Dispensary Committee decided to try the experiment of educating a few female nurses, and as a beginning, I entertained five professional midwives who are well known in the city. The sub-assistant surgeon [illegible] dispensary, although called professional midwives, their utter [illegible] verified Lalla Luchmi Narain's assertion, that thousands of lives [illegible] skill."

SUBSOIL WATER.

[illegible] caused similar experiments to be undertaken in Oudh.

[illegible] India to be carried out in every military cantonment, and most [illegible] next year should give us some very curious results, or, at all events, a good insight and knowledge of this subject, which doubtless [illegible] and stations, though we doubt if it will add much to our knowledge as to the cause of cholera.

[illegible] the Professor's theory really is, and the means that should be [illegible]:—

A.—[illegible]:—

1. [illegible] which, as long as it remains a germ, is not capable of producing the disease.

2. [illegible] soil, if this affords a suitable nidus.

3. [illegible] permeable) the infecting matter ascends and produces the disease.

4. [illegible] poisonous; but

5. [illegible] water.

6. [illegible] for the germ, are—

(a) [illegible] too dry or too wet to favor the development of the germ, so [illegible] the latter case, will produce a like result.

(b) [illegible] almost necessarily results that organic impurities are washed down through it, and accumulate in the subsoil water, or, in other words, over the first impermeable layer.

B.—[illegible]:—

These are various, comprising the nature of the soil, &c., but the most important is the following, *viz*:—

The association of the occurrence of cholera in any locality with a change in the amount of subsoil moisture. Is the development and decline of an outbreak coincident with alterations in the amount of subsoil moisture, and if so, what are these alterations?

C.—[illegible]:—

The level of the water in wells kept exclusively for the purpose is the best means of estimating the amount of subsoil moisture.

The variations of water level in such wells can be most satisfactorily observed by means of [illegible].

TAPTHIS AT NIGHT.

[illegible] "Tapthis" [illegible]

and cells, whenever at 9 p.m. the thermometer indicates a temperature of, or in excess of 95 F.: provided the wind is not from the east, when tatties can have no good effect, as then the air is already too moist to cause evaporation, and their use, in such circumstances, only adds to the distress occasioned by the excessive temperature.

FEES FOR INQUESTS.

IT has recently been ruled by the Government of India that when a medical officer, other than a civil surgeon or officer in medical charge of a civil station, is summoned to give evidence in a Criminal Court, touching the result of a *post-mortem* or other examination conducted by him, in cases not falling within the ordinary discharge of his duties, he should receive a fee of Rs. 16 in addition to the usual expenses payable to witnesses.

With such restrictions, however, the Government will not have to disburse the money very often.

JAMAICA MEDICAL NEWS.

SEVERAL interesting particulars relating to medical matters in Jamaica have reached us (*The Lancet*) by the last mail. In the first place, cinchona cultivation seems to be progressing favorably. About 20,000 young plants of the C. Officinalis, and 10,000 of the C. Succirubra will be ready for sale at the government plantations early next year. The trees grow with surprising luxuriance, as has been evinced by upwards of 1,000 plants, temporarily planted fourteen months ago, then a few inches high, being from now three to four feet in height. The Jamaica Lunatic Asylum has been much improved in its management, but it is overcrowded, and two new ranges of buildings are to be erected. Yellow fever has now left the island; good results have been obtained in the treatment of cases of this disease by the free exhibition of carbolic acid. The dry-earth system has been adopted with great success in several of the public institutions. A board of examiners is to be appointed under the Medical Act of 1859, to examine medical men wishing to practice who do not possess a British degree. The new Medical Bill has not yet been brought before the Legislative Council. What it will be is not yet known, but it is hoped that it will be of such a nature as to hold out advantages to medical men to settle in the country districts, where they are so much needed.

EXTENSION OF KNOWLEDGE IN RAJPOOTANA.

JEYPORE.—The *Indian Volunteer Gazette* remarks:—In our last we noticed the formation of the Rajpootana Social Science Congress, and placed before our readers the objects of the Association. We understand that at a recent meeting of the Congress Dr Valentine was enabled to pass a bill for bringing in all the sons of the nobles of Jeypore, from 8 to 18 years of age, into the capital of Jeypore for instruction. The bill was in abstract as follows:—

"That the nobles of Jeypore in order to feel the responsibility that rests upon them in the exalted positions in which they have been placed by Divine Providence to govern and regulate the affairs of their subjects, and that they may be taught the principles upon which all good government depends, the Jeypore Social Science Congress would recommend His Highness the Maharajah to use his influence with the chiefs to send in their sons to Jeypore for education.

"The Social Science Congress would further recommend to His Highness the Maharajah the establishment of a separate school to be entitled the Jeypore Nobles' School, with a competent staff of teachers in Sanscrit, Hindee, Arabic, Persian, Oordoo and English;—where lectures in the natural and physical sciences should be delivered, and instruction afforded in the higher branches of education not generally taught in public schools, such as social and political economy.

"That His Highness the Maharajah be recommended to establish scholarships and prizes for those students who shall distinguish themselves in their studies.

"That His Highness the Maharajah should establish a large boarding house, with ample accommodation for the pupils and their suite, attached to which there should be a riding school and gymnasium, with regular hours set apart for instruction in riding, the sword exercise, and other athletic exercises. The object being to qualify the pupils both mentally and physically for the high position which they will be called upon to occupy."

The bill was laid before His Highness the Maharajah in Council by the Prime Minister, Nawab Faiz Ally Khan Bahadoor, who is president of the Congress, and who takes a lively interest in all matters concerning the welfare of the state. His Highness the Maharajah highly approved of the recommendations of the Congress, and entered into arrangements for their being carried out.

THE *Lancet* notes that, in the Annual Report of the Coroner for Central Middlesex, Dr. Lankester complains of the imperfection of post-mortem examinations. In a case of sudden death, a medical man, having opened the head, and finding an effusion of serum, gave a certificate to that effect. The post-mortem examination was completed by another medical man, who, on examining the chest, found that a piece of meat had got into the larynx, and had caused death by suffocation. Dr. Lankester suggests that, if the Coroner could command in all cases the services of a competent expert to make post-mortems, it would contribute to the interests of justice. For ourselves we look rather to a general improvement in the qualification of medical men, and we are by no means sure that the employment of experts would not be a greater evil than the occasional miscarriage of justice under the existing plan.

THE *Pioneer* remarks that Dr. Moore's Report on the working of the Dispensaries in Rajpootana during 1868 confirms what was previously known, or at least very strongly suspected, *viz.*, that the sanitarium of Aboo suffers more from intermittent fever of a malarious type than any station in the plains, owing to the malarious nature of its climate. Among the European population, however, owing to better sanitation and drainage, this malarious fever at Aboo has been brought within more manageable dimensions.

Dr. Moore justly observes that, in adopting measures to prevent malarious fever, a blow is at the same time struck at many other diseases, such as liver complaint, dysentery, spleen,

description of poison is recorded thus:—By arsenic 63; potassium 151; essential oil of almonds 31; oxalic acid 66; sulphuric acid 53; nitric acid 16; muriatic acid 5; carbolic acid 5; salts of lead 242; improper medicine 17; overdose of medicine 52; Godfrey's cordial 56; improper food 33; aconite 6; belladonna 6; alcohol 35; ammonia 8; hartshern 3; chlorodyne 4; vermin-killer 20; turpentine 3; phosphorous 15; sulphate of copper 3; colchicum 3; disinfecting fluid 3; nitrate of

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appointed a Commission consisting of Dr. Ranking, Sanitary Commissioner, Dr. Smith, of the Medical College, and Native

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the *Medical Journal* on Dr. Hallier's hypothesis as to the origin of cholera from parasitic fungi, states that he considers Dr. Hallier's observations vague and undecided. Mr. Berkeley Mr. Thwaites, the acute Director of the Botanical Garden at Peridenya, Ceylon, (a man of extensive acquaintance with cryptogamic plants) to acquire every possible information both in India and Ceylon. All his inquiries, however, have failed to detect a single fungus on the rice plant, even distantly allied to (Peronosporeæ Asexuales), while the only fungus which has been detected is a little species of cladosporium, differing from the universally diffused cladosporium herbarum, and not, it would appear, even a true parasite. Amongst some 7,000 numbers of fungi from North

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HISTORICAL EVIDENCE REGARDING THE EFFECTS OF USING LARGE DOSES OF OPIUM AND IPECACUANHA IN THE TREATMENT OF ACUTE TROPICAL DYSENTERY

By WILLIAM RUTHERFORD, M.D., LL.D., C.M.G., Member of the Madras Medical Service.

In a recent number of the Madras Medical with the year 1786, contain only the correspondence of the

In the year 1807, the Commander-in-Chief sent to the Medical Board a complaint he had received from the in the Hill fort of Ghooty, to the effect that the Regimental supply of certain medicines which it was his practice to use in larger quantities than usual in the treatment of diseases then very prevalent in the station.

The particulars of Mr. Abercrombie's complaint were, that he had indented for ipecacuanha, which it was his peculiar get his indent met. Also, that the number of his venereal been obliged to buy in the bazaar.

In those days, one member of the Medical Board was specially deputed to superintend the Depôt of Medical Stores, and to check all requisitions made upon the store department. This duty, in the year 1807, fell to a Dr. Terence appear to have been possessed of a passion for uniformity. He made elaborate calculations as to the quantity of each having settled in his own mind what the proportion should be, he turned a deaf ear to all importunities for more.

In regard to ipecacuanha he could not understand why Mr. Abercrombie should have used *six* pounds, while the surgeon of another corps had been satisfied with a *pound and half*. The excuse of "peculiar practice" was not listened to for a moment. The repeated solicitations of the Regimental Surgeon failed to extract more than an additional pound of ipecacuanha, plaintively notes, "will not last more than three days, as I now use it." In despair at seeing so many of his men dying, for want of the remedy he had confidence in, Mr. Abercrombie made his complaint to the Commander-in-Chief through his Commanding Officer.

The 1st and 3rd Members of the Medical Board, when the complaint was referred to the Board for report, condemned the "cutting down" practice of their colleague, the 2nd Member, *in toto*. It was shown that large quantities of ipecacuanha remained in store at the very time that the soldiers at Ghooty were dying for want of it. Dr. Gahagan, in reply, defended unfairly disposed of. He formed this opinion, he says, from an examination of the hospital journals kept by Mr. Abercrombie. It was known, however, that, owing to the heavy sick list at Ghooty, not a fourth part of the cases had been entered in the journal. Dr. Gahagan, having been proved to be wrong in nearly every particular of this transaction, at last took refuge in the statement that he did not approve of Mr. Abercrombie's derable than Mr. Abercrombie's, he considered himself justified

admit himself to be in the wrong, the Medical Board caused to be recorded in their "proceedings," the whole correspon- for the dispute between the members of the Board, and the very undignified proceedings of the 2nd member, no record whatever of the fact that very large doses of opium and ipecacuanha had been successfully used by medical officers in the Madras Presidency, would have been preserved.

One or two things in connection with these papers call for

no little astonishment to hear of doses of opium, equivalent to *fifteen* or *eighteen* grains, being swallowed repeatedly without producing any ill effect. On this point, I have ascertained that the opium in use at that period was bazar opium grown in the province of Mysore, or the Hyderabad country. The Mysore opium was certainly of good quality, as it is to this day, but I can't say what Hyderabad opium may be like. Only late in the year 1807 did the Medical Board make arrangements to secure regular supplies of "Patna opium" for hospital use. But with opium of any known quality, we should hesitate in these days, in the use of doses so heroic. In the second place, we can scarcely avoid noticing the severity of the types of dysentery prevailing amongst our European troops sixty years ago. We see, now-a-days, occasionally dysentery of the true hæmorrhagic type, but it is not a common thing to find, as did Mr. Heward in Her Majesty's 30th Regiment at Wallajabad, that men "on guard, at parade, or in bed, became first cognizant of the existence of their malady by passing a large quantity of fluid blood unattended with griping or tenesmus."

Dysentery in those days had more of the epidemic character than we often see in the present time. In some Regiments, I believe that the monthly returns give from 70 up to 150 cases under treatment at one time.

Flux, next to fevers, was the commonest disease of the period. Looking back to the condition of the British soldier, to his accommodation, and habits of life, and to the severity of the disorder in particular corps and stations, one cannot help suspecting that the disease at that time often assumed a contagious form, such as in modern times, with improved barrack space, and the absence of foul privies, we rarely witness.

But in those almost forgotten days, we must bear in mind that although violent "fluxes" destroyed vast numbers of British troops, they were happily strangers to that mysterious pest of modern times, against which all the resources of our art appear to be powerless. The very name of "cholera" rarely appears in the official returns of the Medical Board, prior to the time of the great outbreak of 1817.

(To be continued.)

Official Selections.

EXTRACTS FROM THE RECORDS OF THE BENGAL MEDICAL DEPARTMENT.

Pro., 1st April, 1789.—All regimental baggage would seem to be carried on elephants at this period; the 1st Battalion of Europeans was obliged to await the arrival of the animals in changing station from Dum-Dum to Berhampore.

Pro. 22nd April.—It would appear that surgeons were not allowed leave to Europe. The Board reports to the "Secretary to the Military Department of Inspection" that "there are no surgeons in Europe on leave of absence, as they were ordered to resign the service before they took their departure from Bengal."

Pro., 30th April.—The Board are informed by the Secretary to the Government "that the Governor-General in Council has passed a resolution, that the Secretary to Government should be authorized to send to the Secretaries of the subordinate Boards for any papers required to elucidate points before the Government, and that, on intimation from him, the papers should be furnished at once without writing to copy."

Pro., 15th June.—The price of wine and empty bottles and freight is noted in the following account from Mr. John Ferguson, one of the head merchants of Calcutta:—

Average cost of 1 dozen good madeira at Calcutta		Rs.	100
Freight to Dinapore and Chunar		„	15
Rowanna duties		„	16
			131
Risk of the river at ½ per cent.		Rs.	2 8
40 dozen empty bottles for drawing off at Rs. 16 per 100		„	77 0

Pro., 21st July.—In the Board's proceedings are noted to examine recruits as they arrived, selection was always made by the officer commanding a regiment of men intended for that corps.

Pro., 29th August.—Captain Henry Grace having compiled a digest of the existing military regulation, the Governor-General directs that the work shall be revised in the several departments to which the different sections appertain.

The Head Surgeon of Berhampore writes to ask for an allowance of house rent, as he has to pay Rs. 240 a month for a house at a distance from the cantonment of the three European Regiments, which obliges him to keep a carriage, even at a surgeon's case, because at the appointed hour surgeons can be [illegible] to have them in readiness with bandages, &c., &c., there is a house for him; Rs. 90 a month is eventually recommended for him by the Board.

The Hospital Board, in answer to an inquiry from the Military Board regarding extension of hospital at Cawnpore, for reception of insane or infectious patients, or whether such should be housed in separate buildings, reply that the latter plan (detached buildings) is certainly best when required for the above classes; but they do not see the necessity for incurring the expense for either, as "infectious disorders in this country are but little met with, except small-pox, and a temporary building for such patients can always be procured at the season when it is prevalent, while an insane hospital exists at Calcutta, to which all such patients should be sent."

Pro., 23rd Oct.—An assistant-surgeon of artillery of three years' service, in Fort William, appeals to the Commander-in-Chief against his commanding officer, "who has materially interfered with my treatment as a surgeon," apparently having stated that he had mis-treated a corporal of artillery recently deceased. The Commander-in-Chief orders the Board to assemble and examine the assistant surgeon regarding his treatment of the case, with direction to call on such witnesses and evidence as they require. The Board reports unfavourably of the treatment applied to the case, and the Commander-in-Chief orders the assistant surgeon to be removed from the artillery, and to attend the Presidency Hospital as a pupil, and not to be permitted to prescribe until the head surgeon can report favourably of him.

1790.

13th Feb.—The Board furnishes the Government (by order) with a "comparative statement of the annual expenses of the Medical Department, under the present system, and under that which prevailed before the receipt of the Hon'ble Company's regulation of 21st September, 1785. The best comparative statements we could form upon systems, &c., so dissimilar."

The total expenditure of the whole medical, military, and civil establishments for one year by the system of 1785 was Rs. 5,60,773. According to the system introduced in 1788, it was Rs. 7,53,490. (The budget for the *civil* medical service only, under the Lieutenant-Governor of Bengal alone, is now Rs. [illegible].)

Pro., 5th April.—Explanatory of certain over expenditure in bazaar medicine, it is stated "castor oil is deemed a much more effectual purgative in most complaints which occur here (Chunar) than salts. Infusions of senna, tamarind, and cassia do not appear to excite the same heat and thirst as solutions of salt, and are consequently often preferred. Thus, "while the expenditure of [illegible] is increased, the [illegible] European medicine on salts, &c., is saved to the Company."

Pro., 21st April.—The head surgeon at Chunar reports to the Board the enormous profits the purveyor must make; thus "all the articles in the enclosed list (of purveyor) are at least 50 per cent. cheaper in Chunar Bazaar than in the purveyor's book of rates," and "country vinegar, of which he charges Rs. 36, only costs him Rs. 3-1, and linseed oil, for which he charges Rs. 19-8, costs him only Rs. 2-9-6."

Notice is taken of barley for making drink for the hospital, and benjamin and vinegar for fumigating and sprinkling the hospital.

Pro., 5th April.—The military [illegible] Board, being now "the season for preparing the annual military statement, for the information of the Parliament. He asks for information about the probable expenses required for the medical department during the coming year, and whether they will [illegible] system in fact.)

Pro., 15th Sept.—Assistant Surgeons would also seem to be [illegible]

In the month of August, 1790, there was a total patients in [illegible]

[illegible]	...	78
[illegible]	...	31
[illegible]	...	40
[illegible]	...	25
[illegible]	...	2
[illegible]	...	81
		337

[illegible] with the nature of the soil, and distance from the drainage; the more permeable the soil the greater the angle of inclination and the more extensive the benefit which the drain is calculated to give.



For [illegible] drainage, therefore, requires that the drain [illegible] for a good summer part.

[illegible] Calcutta [illegible] to [illegible] the [illegible] water on the streets be at such a depth as to [illegible] done, and those owners of property who are [illegible] importance will embrace the opportunity afforded them, by the drainage works, to effect [illegible]

Especially in the case of tropical rains like those of Calcutta is this necessary. In England, all the rain fall is but one-third, and spread with tolerable uniformity over the whole year, longer intervals are allowed for the smaller quantity of water to pass to the drains. Here the heavy rain falls almost exclusively during 4 months with but very brief intervals for the passing off of the absorbed portion.

There can, I think, be no doubt whatever on this subject. Let those who advocate dry conservancy, a highly desirable plan in particular cases, but not possible in large towns, try their system in an undrained soil during the rainy season; it will, [illegible] be found that "dry conservancy," when carried out with [illegible] earth, and a wet place of deposition, is not [illegible] the [illegible] system, which it is known to be under [illegible] favourable circumstances.

It is much to be regretted that the European quarter of Calcutta, that south of Park Street, should have been deprived—unless a second considerable outlay on the part of private [illegible] of the advantages of subsoil drainage [illegible] so far as it is afforded by the deep [illegible] works in the street.

[illegible] house in that large and important area.

[illegible] a large [illegible] the [illegible] a matter of great [illegible] would [illegible]

By these arrangements, [illegible] thing like the extent it might have been; but not only so, the subsoil drainage, which the [illegible] a long way to carry out, is still undone; and that where, in

[illegible] condition in the year 1858.

[illegible] after its cessation, an enormous amount of water reaches the

Correspondence.

ON SUBSOIL DRAINAGE. BY MR CLARK, C.E.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—It is much [illegible] to me to perceive, both from [illegible] Sanitary Report on the drainage and [illegible] of Calcutta, that the [illegible] from your article of the 1st August, that the [illegible] drainage is beginning to be understood and appreciated. [illegible] that what is wanted [illegible] subsoil drainage [illegible] to be fully [illegible] by the natural [illegible] [illegible] with [illegible] at a low [illegible] only assisted at all by the [illegible] the level of the [illegible] and it [illegible] this [illegible] [illegible] will take [illegible] the [illegible] [illegible] with [illegible] [illegible] variety of practical [illegible]. [illegible] who, when informed that his theory did not agree with the

[illegible] the [illegible] [illegible] Henry [illegible] the [illegible] [illegible] [illegible]

condition; great expense had been incurred in clearing the space around the hospital buildings; and in doing every thing that could be done, but without avail; and I have it from the present surgeon in charge, it was considered that nothing short of the removal of the Hospital to another locality would be efficacious.

Warned by experience, I no longer insisted that the accidents, more or less serious, which occur on the drainage as on all public works, should be treated in the Native Hospital. On the contrary I studiously avoided sending any one there for a long time; however, during the years 1858 and '59 the Dhurrumtollah sewer, which is one of the main arteries of the system, was completed, and the effect was to drain the soil to a depth of thirteen feet from the surface.

When the work was *commenced* in May, 1858, a totally different state of things was discovered. I then wished to sink a trial well immediately in front of the hospital compound. The well was to be sunk in the native fashion, as had been successfully done in other places; here, however, after the road crust, about 3 feet thick, was removed, the soil below was found to be a quicksand; and the native well sinkers found it to be utterly impossible to put two of their pottery rings one upon the other, in fact impossible, with their means, to make a hole eight inches in depth. The change in the state of things, when a large sewer laid with its invert upwards of 13 feet below the surface, in a stratum composed entirely of this quicksand, will readily be understood; from enquiries I made from time to time, I found that the result of surgical cases was improving, and that the fatal gangrene gradually and entirely disappeared.

It so happened that, on almost the last day of my attendance at the Municipal Office previous to my departure for England in 1865, I heard a gentleman complaining to the secretary, of the inconvenience he was put to by the drainage of Hospital Lane, which is to the east of the building.

This led me to introduce myself to this gentleman, Dr. Bailey, the present Surgeon in charge, with whom for the first time I then became acquainted. Having heard his complaint, I replied that, in my opinion, he was the last person who had cause to complain of the undoubted, but unavoidable inconvenience of the road being blocked up; he did not see why this should be so. I then asked him if he knew anything of the history of his hospital? What, for instance, had been the result of surgical operations in the year 1858, and was there any difference then, in 1865? Yes, he knew the lamentable and fatal difficulty which had attended the practice of his predecessors, and he knew that this difficulty had now disappeared; a satisfactory but unexplained change had occurred.

Dr. Bailey had not seen the drainage operations in progress in Dhurrumtollah, and had no idea of the magnitude and depth of the sewer there; he then, however, very candidly expressed, and up to the present time maintains his opinion that the subsoil drainage of that locality cannot but have had a most important share in the improved sanitary condition of the hospital, and that though there are surface nuisances still surrounding it, yet he now has no fear whatever as to the result of his surgical cases, arising from the crowded locality, or the sanitary condition of the building under his charge.

I trust I may be pardoned for dwelling at so great length on this subject. My object has been to illustrate somewhat one of the important results of the works which have been so generally and greviously misunderstood, and on which I have the honor to be engaged.

Your obedent servant,
W. CLARK, M. INST., C. E.,
Engineer to the Municipality of Calcutta.

19th August.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—In the *Indian Medical Gazette* of the 2nd of August, there appears an article on the Medical Service and new Furlough Rules, in which is set forth the injustice done to holders of civil surgeoncies, who, by a recent order, are made to forfeit their appointments by taking leave under the new rules.

As the writer of that article, I take leave to object to the note you have appended to it, which appears to me to place the subject in an entirely false point of view, and I must beg of you to allow me to say a few words on the subject.

My plaint is that, whereas it was declared that leave taken under the new furlough regulations, would not involve forfeiture of appointment; a special rule has deprived medical officers holding appointments of this advantage, and that so far the new furlough rules have been made to them of none effect.

The purport of your foot note is that the loss of the appointment holder will be the gain of some less fortunate officer.

But look fairly at this other side of the question, and see what may be said against it. I presume that "snug" appointments are not given to their possessors by chance medley. Those who hold them have probably been selected for professional attainments, former good service, or special qualifications.

If so, they have earned their advantages, and are entitled to retain them.

But let it be granted, for the sake of argument, that it is only fair that appointments should be vacated on leave for the benefit of others. Why should this be the case only in the Medical Department?

Let the modified rule be applied to the Military and Civil Services; there would then be no *class* injustice. *Only*, I think, a general cry that one of the chief benefits of the new furlough rules had been abrogated.*

I am, Sir,
Your obedient servant,
THE WRITER OF THE ARTICLE.

A HARD CASE.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—I entered the service under G. G. O. No. 1060 of 1864, which guaranteed me pay, as an assistant surgeon, under five years' service, at the rate of Rs. 450 a month, when in charge of a native regiment. Last year, I was in charge of a regiment, the surgeon having gone home on furlough, and received Rs. 450. This year, owing to the paucity of medical officers, I am sent to officiate in charge of a regiment, the surgeon of which has gone on medical certificate to the hills, under the furlough rules of 1868, and I am only allowed Rs. 362-8-9, that is, Rs. 88 less than I was promised in G. G. O. No. 1060. Rs. 362-8-9 consist of my unemployed pay Rs. 286-10 and half the staff of the surgeon on leave. As I was only officiating in my last appointment, I am not allowed to draw half my own staff, *viz.*, half the difference of Rs. 286-10 and Rs. 450.

It is, surely, unfair that, because another medical officer chooses the furlough rules of 1868, Government should break faith with me, and that I should lose nearly a fourth of my whole pay.

AN ASSISTANT SURGEON.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—Seeing the subject of subordinate medical education under discussion, I am induced to submit the accompanying note.

Your proposed text books for Native Doctors, in the vernacular languages of India, would certainly be a desirable boon to them. But we understand that it would be better to insist upon the possession of English qualification, which we find is most necessary for the Native Doctors, as they are bound to keep the medical records in English, and besides it will enable them to improve their professional knowledge. Indeed, they are so poorly paid by Government, that they can hardly purchase the necessary English works for their improvement; but I see that they are equally required to possess English qualification, both when placed under Civil Surgeons and in independent charge. As far as I know, a Native Doctor under a Civil Surgeon has to keep ready all the daily Registers, &c., before his master's arrival to the Hospital; who, coming to the Hospital, minutely and attentively observes the patients, books, &c., kept by his Native Doctor under his instruction, and leaves the Hospital after putting his signature upon those books. In this way the daily works are carried on till the last day of the month. When monthly returns are due, the Native Doctor prepares them carefully and with his utmost labor, in order to submit them earlier to the higher authorities, and when ready he takes them to his master,

* [In a case in charge of a regiment, or a Civil Station, to which there is not a Medical Officer, the officiating charge is held a Staff appointment.—Ed. *I. M. G.*]

charge, they are bound to submit their returns, reports, &c., in

provement, not unfrequently purchase English works out of their own pocket, and also borrow some books and journals from their masters (Civil Surgeons) and friends. "Where there is

Doctors in general, which we trust was far from being the case. It reminds me one of our country proverbs, which is "the goat crys for it has lost its life, but the eater complains that the meat

Cataract.

has been led, by his great practical familiarity with hypodermic injection of morphia, to apply it to the prevention of pain from blisters. Just before applying the vesicatory to any part, he

Ammonia 7½ grains.

M. BLACQUIERE has devised the following ointment for chapped nipples which, it is said, gives unfailing relief after

January, 1869, France had one insane person for every 442 be increasing, not only in the great towns, but in less important centres. He says that it is an error to suppose that insanity attacks women more than men. If, he adds, it is correct to say that at any given moment there are in the asylums rather more women than men, it is not less certain that more men

M. MAREY, the

enumerating to the society of Biology in Paris the results of his

of the wing describes in the air a figure of 8. He had been

child than that recorded in healthy adults. His observations Giersc, Frohlich, and Lichtenfels, on themselves, give a range of about 1 Fahr only.

continues on till midnight.

4 a.m., while the child is still sleeping soundly, and before food is taken.

6. Fluctuations between 9 a.m. and 5 p.m. are usually trifling.

7. There seems to be no very definite, or at least obvious,

At a meeting of the Royal Medical Society, Mr. Smart made some remarks on the movements of individual joints of tape-worm. He said that the well known occurrence of joints escaping outside the sphincter ani at other times than during the act of defecation, was owing to the power of move- opportunity of witnessing this power in a joint which he had various forms assumed had been drawn on paper and exhibited. It elongated and contracted itself, raised up its anterior extre- extremities touch, and once turned itself completely over. When the movements stopped they could be re-excited by warming it.

M. Poulet, in a communication to the Académie des Sciences, affirms that alcohol in large doses is a veritable antidote to the poisonous mushrooms of the germs *amanite*; and he believes it equally valuable in the poisoning by other species of mushrooms. The author adds, that ebullition in water, impregnated with salt or vinegar, is insufficient to render the poisonous varieties inoffensive, and that the *agaric* bulbeux in particular retains

M. scribes to the French Academy his dissections of several species of the snakes called *Calliophis*, in which he finds the poison glands situate in the belly, and the heart nearer the tail. The excretory canals from these glands unite in a canal which reaches

geny, and it appeared that there are some germs that are not destroyed by boiling, but which require a temperature some

M. sparks is made to traverse pure marsh gas, carbon is deposited, and the volume of gas augments considerably. Operating with

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON, AND THE USE OF CERTAIN REPUTED ANTIDOTES; AND THE EFFECTS OF EXCISION, &c.

By J. Fayrer, M.D., C.S.I.

Present:—Dr. Fayrer and Mr. Sceva.—July 31st, 1869.

Experiment No. 1.

Mr. R——'s (of Jounpore) antidote, the powdered root or bark of a plant, name and family unknown, was tried to-day on a dog.

The drug had been sent to me for the purpose, and was fresh and potent.

Half of a powder, the quantity directed by Mr. R——, was given, having been first carefully rubbed, and mixed with about an ounce of water.

A pariah dog was bitten in the thigh by a cobra at 3-3 p.m., and was much excited by the bite. At 3-6 p.m., as symptoms of poisoning appeared, the first dose of the antidote was given, and was all swallowed. The dog was led about, and cold water dashed on its face and thorax, when it seemed drowsy. 3-8.—Lies down; very restless. 3-9.—Hurried breathing. 3-10.—Dog lies down; rises again, and runs about in a restless and excited manner. 3-12.—Restless and uneasy; head swings about as though it were giddy; breathing accelerated. 3-17.—It staggers as it is walked about; cold water sprinkled on its head and chest. 3-18.—The second dose given, that is, the other half of the powder, as directed. 3-20.—The dog is worse; cannot stand, staggers and reels when walked about, and falls over; convulsive movements of head and neck. 3-22.—Convulsed; pupils widely dilated. 3-24.—Dead—in 21 minutes.

The dog was not a large one, but it was healthy and vigorous: the instructions sent with the drug were carefully followed. The result is not favourable to the drug as an antidote in the canine race.

Experiment No. 2.

A dog had a ligature made of stout cord, *soaped* to make it knot tightly, thrown loosely round the fore-arm. It was then bitten by a cobra below the ligature, which was tightened as firmly as a man's strength could draw it. Immediately after the bite, a red hot iron was then introduced into the fang wounds, and the bitten part thoroughly cauterized, strong carbolic acid having first been well rubbed in.

Bitten at 3-31 p.m.

Ligature tightened within five seconds.

Carbolic acid and actual cautery applied at 3-33, that is, in two minutes after the bite, and one minute and fifty-five seconds after the ligature was tightened. The limb seemed to be completely strangulated, it became livid; blood oozed from the fang wounds, and the limb was all but paralysed. There could be no doubt that the limb was thoroughly strangulated, or that the bitten parts were well cauterized. 3-36.—Notwithstanding all the above precautions, the dog is already much affected by the poison; is lying prone, unable to rise or to walk; the breathing hurried; and convulsive movements occurring occasionally. 3-40.—Convulsed. 3-41.—Dying. 3-42.—Dead—in 21 minutes.

There was at the most an interval of five seconds between the cobra's bite and the tightening of the ligature, which was not afterwards relaxed. This experiment clearly proves that the poison is taken into the circulation very rapidly; certainly five seconds did not elapse between the bite and the application of the ligature, which had been previously thrown loosely round the limb, in order that no time might be lost in tightening it after the bite, and yet the dog (it was a small one) died of the poison in 21 minutes.

During that very brief interval sufficient poison entered the circulation to destroy life. It is possible that more may have entered after the ligature was tightened, but the quantity must have been very minute, as the ligature was very tight. In an ordinary snake-bite it is difficult to conceive that a ligature could be applied more speedily than in the case of this dog. So that, even this method of treatment, rational as it certainly is, can only be regarded as of doubtful benefit.

I should note, and it is a subject, I believe, that I have not alluded to before in other experiments, that the rigor mortis took place in about 1½ hour after death, in these two dogs. The blood coagulated after death.

Experiment No. 3.

A fowl had a ligature placed on the thigh loosely: it was bitten by a cobra at 3-47. The ligature was tightened at the same time that the snake bit; before its fangs were withdrawn, the ligature was thoroughly tied, so tight that the limb seemed completely strangulated, the part becoming livid and disabled. 3-50.—No sign of the poison taking effect; the fowl hops about on the sound leg. 3-52.—Actual cautery applied to the fang punctures, which were bleeding freely venous blood from the conjested limb, and the wounded parts surrounding were thoroughly disorganized.

The ligature was then divided; the fowl being placed on the ground ran about; the ligatured limb still paralysed.

3-54.—Fowl crouching, but rises and runs about when disturbed. 3-55.—Looks drowsy; is crouching, and begins to hang its head, closing the eyes. 3-57.—Head drooping, beak resting on the ground. 3-58.—Fallen over on its side, rises with a convulsive movement, and falls again. 4 p.m.—Is unable to stand or walk. 4-4.—Convulsive movements. 4-11.—Dead—in 24 minutes. Blood coagulated after death, when removed from the great vessels.

This experiment, more than ever, proves the subtle and deadly nature of the poison. The ligature in this case prevented the entry of the poison into the circulation, which was evidently retained in the congested part of the limb below the ligature. Carbolic acid and the actual cautery applied to the wounds, most thoroughly, failed to destroy it. Yet no sooner was the ligature relaxed than the poison entered the circulation, weak and altered as it must have been after the severe pressure of the ligature, and rapidly killed the bird. This proves that there is danger after removal of the ligature when it has been most effectually applied. The poison spreads itself by diffusion throughout the juice of the strangulated part; so that nothing short of destruction or removal of the whole of that part seems to offer a hope of subsequent escape from toxic absorption.

With reference to the application of a ligature above the bitten part, I would here remark that it is almost physically impossible with the power of one pair of hands so to tighten a cord round a dog's leg, as thoroughly to strangulate the limb. The experiments seem to prove this, but also to shew that it is possible completely to arrest the circulation through a fowl's leg in this manner.

With tourniquets it might be done no doubt, and a man's arm or leg, certainly his toe or finger, might be so strangulated, but, as ordinary snake-bites, do not occur where any tourni-

to prevent immediate entry of the poison, through the circu-
of cloth, twisted with the common stick tourniquet, and the
fullest extent that the strength of the hands is able to twist it.
extends to a certain depth, and that deeper, the circulation still
goes on; with this, the poison retained by the ligature in the
partially strangulated portion will soon communicate by dif-
blood has been so far limited as not to be fatal, and that we
may, therefore, be able to help the sufferer, though the troubles
that the urgent necessity is for the application of some agent
that will equally diffuse itself, and neutralize or destroy the
poison whilst yet retained, and only partially diffused through
in a real cobra bite.

Carbolic acid or other allied substances would probably be useful. But it is obvious that the success of this, or, indeed, of any mode of treatment, lies in the promptitude and tension with which the ligature is tied, and the decomposing agent applied.

EXPERIMENT No. 4

Dr. W. J. PALMER, Professor of Chemistry, was present also.

A fowl, having its right leg thoroughly tightened round the thigh, and was then bitten below it, by a cobra at 4-7 p.m.

4-10.—No effect of the poison visible. 4-22.—Breathing rather hurried, but otherwise seems unaffected. 4-30.—Begins to shew signs of the effects of the poison, nods its head drowsily, rests its beak on the ground; it is evidently affected. 4-35.—Much the same; 30 drops of the liquor ammoniæ injected in three doses with the hypodermic syringe. 4-37.—Fowl is drooping fast, cannot move. 4-41.—Convulsed. 4-44.—Lies unconscious, but convulsed. 4-50.—Dead.

In this case the ligature, which consisted of a cord soaped to make it run easily and knot firmly, was tied round a fowl's thigh from which the feathers had been stripped, with the greatest amount of tension that a man's hands could exert. The part below the ligature became livid, and the limb paralysed. In this condition it was bitten at 4-7 p.m. The ligature was never relaxed, and certainly did not slip, yet at 4-30, perhaps earlier, that is, in 23 minutes, it began to shew that the poison had, notwithstanding the ligature, found entry into the circulation. Its death, 21 minutes later, proved that sufficient poison had entered to destroy life, and also proves, I think, that it is almost beyond our power to keep it out. The question is, supposing the strangulation of the limbs to have been complete, how did the poison enter? It must have passed the barrier of the ligature, how did it do so? I can only explain it by

found its way in to destroy life.

it retards the entry of the poison is abundantly proved, and the immediately subsequent application of some decomposing

EXPERIMENT No. 5

A fowl was deeply bitten in the thigh by a daboia at 4-31. The snake had been in confinement for some time, but it was vigorous and vicious, and plunged its fangs deeply into the bird's thigh, drawing blood. 4-36.—Not affected. 5 p.m.—Not affected.

[illegible] fowl was buried, and the fowl was alive and well on the 2nd of August.

This experiment is a most instructive one, and proves that a poisonous snake may bite without poisoning. It is not in the least apparent that this daboia was not poisonous enough, although in captivity it had been at rest for many days, and had not exhausted its poison by biting; another daboia that had been six months in captivity, and had eaten nothing during that period, killed a fowl rapidly by one bite. It furnishes an explanation of some of the so-called recoveries from snake-bite, in which, when the snake has been seen and the punctures of its fangs are visible, the patient recovers from the mental alarm and prostration after the administration of one of the supposed antidotes. That such alarm does cause temporary [illegible], as well as mental prostration, I have had proof in the following case:—Some time ago, on visiting the hospital one morning, I was told that a man had been admitted during the night suffering from a snake-bite, and that he was very low.

I found him in a state of great prostration, he was hardly able to speak, and seemed to be in a state of great depression. He said [illegible] that during the night in going into his hut, a snake bit him in the foot; that he was much alarmed, and [illegible] passed into a state of [illegible] which they brought him to the hospital. They and he considered that he was dying, and evidently regarded his condition as hopeless. He was so low in that condition that [illegible] from which the sufferer has been snatched by the timely administration of an antidote. On asking for a description of the snake, they said they had caught it and had brought it with them in a bottle. The bottle was produced, and the snake turned out to be a small innocent Lycodon. It was alive, though somewhat injured by the treatment it had received. On explaining to the man and his friends that it was harmless, and with some difficulty making them believe it, the symptoms of poisoning rapidly disappeared, and he left the hospital as well as ever he was in his life in a few hours. Had no snake been found, and had an antidote been given, who would have been prepared to dispute its efficacy? I am sorry to destroy popular and favorite illusions, when they are harmless, but in a matter of this kind, it is well that the truth should be known.

EXPERIMENT No. 6

A fowl was bitten by a daboia on the thigh at 4-39 p.m. The snake has been over six months in captivity, during which time it has constantly refused to take food or water. It was active, vigorous, and vicious; it plunged its fangs deeply into the fowl's thigh and drew blood.

In 20 seconds the bird was violently convulsed; in 60 more [illegible] dead.

[illegible] experiment with the preceding one, and I think it confirms what I said as to the occasional uncertainty of a snake-bite. These two daboias were both old, that is to say, old in captivity. They were both, notwithstanding, vigorous, [illegible] and both [illegible]

The blood of the fowl was examined after death. Dark colored coagulated blood was found in one of the great vessels near the heart. In others, and in the cavities of the heart it was fluid, and remained so after death.

It is worthy of notice that in the mammals poisoned by the daboia, the blood was found to be fluid, and to continue so after death. In birds it was sometimes coagulated. Could this be due to the rapidity with which life was extinguished in the bird?

Present :—Dr. Fayrer, Dr. W. Palmer, Professor of Chemistry, and Mr. Sceva.—August 7th, 1869.

Experiment No. 1.

A pariah dog was bitten by a cobra (Teturiah Keautiah, of the snake-men) in the hind leg at 3-5 p.m. At 3-8 p.m., thirty drops of liquor ammoniæ sp. gr. ·959, diluted with three parts of water, were administered. 3-12.—Dog lying down, licking the wound; when walked about, limped on the bitten leg; breathing hurried. 3-15.—Thirty more drops given as before. 3-22.—Lying down; limbs twitching. 3-23.—Thirty more drops given. 3-24.—Convulsed; lying down; unable to rise. 3-25.—Dying; limbs convulsed; pupils widely dilated; *tapetum lucidum* very brilliant. Heart still beating, no respiratory movements. 3-26.—Pupils contracted again (this is a phenomenon I have not before observed). 3-28.—Another thirty drops of liquor ammoniæ administered. 3-29.—Heart still beating irregularly. 3-30.—Dead—in twenty-five minutes.

Ammonia has long been considered one of the most potent of all remedies in snake-bites. The object of this experiment was to test its value. The result is not encouraging.

Experiment No. 2.

Mr. R——'s "antidote" was again put to the test. The powder was rubbed into a pulp mixed with water in the proportion directed; it was then administered to a dog at 3-31 p.m. The dog was then bitten by a cobra in the thigh. 3-35.—The dog is affected by the poison, looks scared, and limps in the bitten limb. 3-37.—Staggers, lies down; breathing hurried. 3-39.—Another dose administered. 3-43.—Limbs convulsed. 3-45.—Paralysed; heart beating irregularly. 3-59.—Heart still beats; no respiratory movements. 4 p.m.—Dead—in 28 minutes.

I am afraid the antidote must be regarded as inapplicable to the canine race.

Experiment No. 3.

Jugular vein of a pariah dog exposed at 3-42, and a diluted solution of liquor ammoniæ sp. gr. ·959—one part to water two parts—to the extent of 30 drops, injected. No apparent inconvenience caused to the dog by the injection. At 3-43, the dog was bitten in the thigh by a cobra. 3-48.—Dog showing signs of the poison; 30 more drops, diluted in the same way with 6 of water, again injected into the jugular vein. Shortly after this, the dog began to turn round and round in the most restless manner; 30 more drops injected similarly diluted in the other external jugular, as a large thrombus had formed in that part exposed. 4-10.—Dog convulsed. 4-12.—Cannot stand, limbs paralysed. 4-13.—Violently convulsed all over. 4-20.—Dead—in 37 minutes.

The cobra was not fresh in this case, and yet it killed in 37 minutes. The injection of the diluted ammonia was not more satisfactory than that of the undiluted, as far as its immediate antidotal effects were concerned; but it would appear that the injection of diluted liquor ammoniæ into the jugular vein is not followed necessarily by convulsions, or other violent constitutional disturbance.

Experiment No. 4.

Some of the blood of the dog killed by the cobra in the first experiment, where the ammonia was given, was removed from the body about three-quarters of an hour after death. It was found to be firmly coagulated, but some of the serum and part of the clot mixed with water, to the extent altogether of 40 drops, were injected with the hypodermic syringe into a fowl's thigh, the actual quantity of blood thus used could not have been more than a few drops. The injection was made at 4-20 p.m. 4-35.—Slightly affected by the poison. 5 p.m.—Crouching, head drooping, appears giddy. 5-30.—Lying on one side; convulsive movements. 5-35.—Dead—in 75 minutes.

What can more forcibly illustrate the extraordinary virulence and potency of the poison than this experiment? A few drops of the blood of a dog poisoned by a cobra, diluted with water, injected into a fowl's thigh, killed the bird in 75 minutes. The quantity must have been excessively minute, but it proves how it retains its power although diluted and mixed with the blood.

Present :—Drs. Fayrer, W. Palmer, and Mr. Sceva.—August 14th, 1869.

Experiment No. 1.

A gentleman residing in Rohtuck having forwarded to me the powdered root or some other part of a plant, name and family unknown, which he had found useful in the treatment of snake-bites, and having requested me to test its efficacy, the following experiment was made :—

℥i of the powder was rubbed with six peppers into a pulp and mixed with water.

A pariah dog was then bitten by a cobra (variety *Kurris Keautiah*) of the snake-men, in the thigh at 3-13 p.m., part of the antidote was then, according to Mr. F.'s direction, rubbed into the punctures, and the remainder administered internally, immediately after the outward application. 3-18.—The dog is affected by the poison, he is restless, nauseated, making efforts to vomit; walks with a staggering gait. 3-22.—Limbs partially paralysed. 3-23.—Convulsed, unable to rise. 3-25.—Lies perfectly motionless, muscles generally twitching. 3 26.—Dead—in thirteen minutes.

The drug had evidently no effect in retarding the action of the poison. The dog, which was a medium-sized animal died even sooner than usual.

Experiment No. 2.

A Mahomedan hakeem, Mahomed Khan, presented himself with some medicine with which, he said, he had succesfully treated several cases of snake-bite in men. It was a strong aromatic smelling powder, dissolved in water, but he could tell me no more than that it was a jungle root. He asked to be allowed to try it, and appeared quite confident of success. A very large and powerful pariah dog was then placed at his disposal, also a cobra, which was not fresh, having been in captivity for some time, and had bitten before. He had the dog bitten in the thigh by the cobra at 3-35 p.m. He was allowed to do, or direct to be done, whatever he liked. At 3-36 he administered a quantity of the drug, which was swallowed by the dog. 3-37.—The bitten leg is partially paralysed. 3-45.—The dog is sluggish and lying down. 3-46.—A second dose administered. 3-48.—Hurried breathing. 3-50.—The dog is nauseated and rejected some half-digested meat. 3-55.—Uneasy; hurried breathing. 4-2.—Lying down, panting, frothing at the mouth. 4-5.—Retching. 4-7.—Lying down; looks depressed, but quite intelligent. 4-15.—When roused staggers as he walks. 4-18.—Lies prone, with the legs outstretched. Has very little control over the hind legs when roused. 4-20.—Another large dose of the drug administered by the hakeem. 4-21.—Limbs convulsed, unable to rise. 4-24.—Tries to rise, falls over. 4-26.—Convulsed. 4-32.—Is quite paralysed; pupils widely dilated. 4-35.—Heart still beats, no respiratory movements. 4-40.—Pupils contracted again (I

[illegible] this symptom in another dog just before death.] 4-12.—Dead; pupils again dilated. Bitten at 3-35, dead at 4-12—in 97 minutes.

The dog was a remarkably powerful and vigorous animal. The bite was not fresh, and yet the dog succumbed in one hour and seven minutes.

The [illegible] expressed much astonishment at the results; he evidently believed that his drug would prove an antidote. He spoke in a somewhat depressed tone of voice, that he had other remedies. He was invited to put them to a similar test.

EXPERIMENT No. 3.

A very large and vigorous pariah dog was bitten in the marginal fold of integument between the thigh and abdomen by a cobra at 3-55 p.m. The part was immediately cut out with a bistoury, the places where the fangs had penetrated being completely removed. The excision was at hand, and the operation was done at once. Two seconds, not more, might have intervened between the bite and the excision.

At 4 p.m. some brandy was poured down the dog's throat. 4-6.—Another dose of brandy administered. 4-16.—He is excited, and the respiration is hurried, perhaps from the brandy. 4-25.—The dog is not yet affected by the poison. 4-33.—Much the same, the breathing rather hurried. 4-42.—No symptoms of poisoning except the hurried breathing, and that may be from excitement. 4-47.—More brandy given. 4-50.—No symptom of poisoning as yet. 5-10.—Vomited; shows symptoms of being poisoned. 5-15.—Vomited again. 5-30.—Restless, breathing hurriedly; abundant flow of saliva. 6 p.m.—Slight convulsions; breathing hurried. 6-30.—Dead. Bitten at 3-55, dead at 6-40—in two hours and thirty-five minutes.

Here again the extraordinary virulence of the poison is shown. The snake bit in a fold of skin which was immediately excised. Yet in the slight interval, it could not have been more than two seconds, enough of the poison had entered the circulation to cause death in two hours and thirty-five minutes, notwithstanding the free administration of brandy. The dog, too, was an unusually large and vigorous animal.

EXPERIMENT No. 4.

A fowl was bitten in the thigh by a cobra at 4-13 p.m. The part in which the fangs had lodged was immediately excised with a sharp scalpel. 4-17.—Fowl lying down, shewing no signs of poisoning. 4-20.—Fowl rather drowsy, eyes closing, head drooping. 4-25.—Breathing hurried; drowsy. 4-28.—When roused can stand, but cannot walk, and falls over; gasping. 4-31.—Convulsed. 4-33.—Dead—in 21 minutes.

This again shows the extraordinary virulence of the poison. The entire mass of muscle into which the fangs were impressed was clearly cut away within three seconds after the bite, and yet poison sufficient had found entry to cause death. That death was much retarded there can be no doubt, for the fowl lived twenty-one minutes, instead of three or four, after being bitten. Small as the encouragement is to be derived from such experiments as these, it yet points in the right direction in which we are to look for any rational treatment.

EXPERIMENT No. 5.

A fowl was bitten in the carpus, extremity of one wing, in a thickly vascular part, by a cobra at 4-10 p.m. This was amputated at the carpal joint immediately the fangs were withdrawn. The scalpel was ready, and it was removed within three seconds of the completion of the bite. The amputation was about half an inch above the highest fang's mark. 4-48.—No symptom of poisoning, no bleeding from the wing. The fowl is running about quite indifferent to either poison or amputation so far. 4-55.—No symptom of poisoning as yet.

August 15th, Noon.—The fowl is alive and well; in this case, the poison has evidently not entered the circulation, the excision having been in time to prevent it. These experiments prove that the poison takes effect chiefly through the venous circulation, and that if excision be practised immediately and thoroughly, either the whole or part of it *may be* prevented from entering the circulation. No doubt some of the poison finds way into the circulation by diffusion from the centre of inoculation, and thus all may not be removed by even very free and very early excision. The natural deduction is, that the part should be cut out as rapidly and extensively as possible; and excision, as in the cases of three animals, delay of a few seconds may prove fatal.

RESULTS OF SANITATION IN INDIA.

By W. J. MOORE, L.R.C.P.,

Surgeon, Royal Artillery, Bombay Army.

Under the above heading, an article appeared in the *Indian Medical Gazette* for June 1867. It was there demonstrated, that notwithstanding the most extensive [illegible] during recent years, in spite of an almost lavish expenditure on palatial, upper-storied barracks, and in defiance of the expectations of sanitary reformers, the *total loss* of men from the European army in India, on account of sickness, had only been reduced by 7 per 1,000 per annum! It was shown, that as the death rate [illegible], the *invaliding list* was, comparing *total loss* to the service in India, almost equal to the figures with which Lord Herbert's sanitary commission, in 1863, startled the Secretary of State, the House of Commons, and the home press, all of whom up to that period appeared to have been ignorant of the writings of Macpherson, Chevers, Ewart, Cornish, and others, who had previously exposed similar statements. But the idea of a mortality of Anglo-Indian troops at the rate of 69 per 1,000 yearly (being the average for the first half of the present century) was nothing new to those acquainted with the writings of the authors above mentioned. Neither, that although the average of death ratio for the fifty years referred to, attains the high figure of 69 per 1,000, the first and last decennial periods show a wide difference. Up to 1820, for instance, Europeans died at the rate of 84 per 1,000 *per annum*; but the ten years ending 1856 the rate was only 31 *per mille*. Tables 4 and 10,* prepared by the Royal Sanitary Commission, abundantly testify that a gradual decrease of mortality took place. Dr. Chevers also shows, that since the commencement of the present century, the mortality rates of Europeans serving in each of the three presidencies [illegible] particularly [illegible]. "In the Bengal Army, the annual mortality, during the 12 years ending 1853-54, was about 20 in the 1,000 lower than that which prevailed in the 12 years ending 1821." In Madras, the deaths diminished one-half in the [illegible] decennial of 1800, to the end of 1842. The following [illegible] is the above:—

Bengal.		Madras.	
Years.	Mortality per 1,000.	Years.	Mortality per 1,000.
1812-21	87	1801-9	[illegible]
1822-31	78	1810-21	63
1832-41	67	1822-32	52

In Bombay also, as demonstrated by Dr. Coles in 1855-56, the [illegible] ratio [illegible] to 10 per 1,000 *per annum*. But [illegible]

* Vide Royal Sanitary Commissioner's Report, Vol. I.

for purposes of comparison the 51 per 1,000 given by the Royal Sanitary Commission, as the mortality for the decennial period ending 1856, may be fairly taken. And this, it must be recollected, was before what may be designated the *Sanitary Era* in India. At this period, as we learn from Colonel Sykes' tables, the rate of invaliding was 29·4 per 1,000. The total loss to the service, therefore, from both deaths and invaliding was 80·40 *per mille*. This, as compared (in the article previously referred to, as published in the *Gazette*, June 1867) with the death *ratio* from 1860 to 1864, *viz.*, 26·22 per 1,000, and the invaliding of 1866, *viz.*, 46·87 for 1,000: total 73·09, gives a total gain in the loss to the service, of 7·31 only. And this, after sanitation may be said to have been initiated.

The statistics of two more years are now available, and afford further evidence, that *mortality of Anglo-Indian soldiers is principally reduced by an increase of invaliding*. For 1866-67, the death ratio for India was 21·70, and the invaliding 47·62, giving the *total loss* to the service in this country, caused by disease, as 69·32. A slight change for the better certainly, but probably only one of those fluctuations to which all figures of the kind must be periodically subject. The following table shows the death rate and invaliding, for a period of six years, by which it may be seen, that as the former decreases, the latter increases.

Years.	Ratio per 1,000 deaths.	Ratio per 1,000 invalided.
1861	36·74	31·77
1862	25·68	28·29
1863	23·64	35·
1864	21·93	44·1
1865	28·14	34·70
1866	21·70	47·62

If the statistics of the Bengal or Bombay Presidency are regarded separately, the rise under the head of invaliding is even more apparent. Thus, in Bombay, in 1866, the sick sent home were 24·9 per 1,000 of strength; the deaths 10·5 per 1,000. In 1867, as many as 60·6 were invalided, and only 15·6 deaths *per mille*. In Bengal, in 1866, the death rate was 20·11. The invaliding 49·04 per 1,000. In 1867 the mortality amounted to 30·95 *per mille;* but this was a cholera season, and subtracting the deaths from this one disease, the ratio is only 17·11 from all other causes. But the invaliding reached 47·28 per 1,000 of strength. If the average loss, from both invaliding and deaths during the six years, included in the above table, namely, 63·30, is compared with the total loss for the years ending 1856, *viz.*, 80·40, we have a difference of 17·10 in favor of the more recent statistics. But excess of invaliding accounts for 12·59 of the gain, leaving only 5·51 to be otherwise explained. Thus—

Loss to the service from both causes for ten years ending 1856	80·40 per 1,000
Loss to the service from both causes for six years ending 1866	63·30 per 1,000
Gain	17·10
Difference between the amount of invaliding for the first period, and for the last period	12·59
Gain, excluding invaliding.. ..	5·51

If the last three years ending 1866 are thus compared, or if the statistics of the Bengal Army, with its recent 49 per 1,000 of invaliding, are thus compared, the gain otherwise than from invaliding is reduced to a still lower figure! It may, therefore, be confidently stated, that the extension of the invaliding system is the principal cause of reduction of mortality, during recent periods, in the Anglo-Indian Army.

There are, however, other influences independent of pure sanitation, which will, doubtless, account for the small gain over the former total loss, which cannot be attributed *directly* to invaliding. These are—first, the system of short enlistments; 2ndly, change of medical treatment; 3rdly, the lessened consumption of spirituous liquor. A soldier now-a-days, unless in the exceptional case of a man serving nearly his full term of ten years, and again re-enlisting, scarcely ever remains in this country the full decennial period. All European soldiers arriving in India, have already completed from one to two, three or four years of their service or more. And before ten years has passed, they either return home with their regiment, or on the completion of their period of enlistment. Some may re-enlist into other regiments, but the full period of ten years in India is not often exceeded, and in the majority of instances very much shortened. And this brief period of residence tells on mortality. The old ideas of climatization, and seasoning fevers, are now totally exploded. From the day the white man enters the tropics, physical degeneration, more or less rapid in its progress, commences. It is indeed the same with the Negro or Esquimaux, removed to temperate climates. They are found by experience to sicken and die, even as the European too frequently does in India. Without entering on the *questio vexata* of the existence of præ Adamites, or the unity of all races of men, it may be safely asserted, that whether or not climate has produced the differences we now see—from the Negro to the Anglo-Saxon—climate is certainly not conducive to longevity of Europeans conveyed suddenly into the tropics. The destructive influence of age and length of residence in the country was demonstrated in Table X of the Royal Sanitary Commissioner's report, which gives the average annual mortality, at certain periods of service, of the European forces of the East India Company. And these men, it must be recollected, were very differently situated, as they enlisted for life, compared with the Queen's soldiers now, who take the shilling for ten years. From the statement above referred to, it may be seen, that whereas in the Company's forces the death rate was 47 per 1,000 among men of from five to ten years' service, it increased gradually until it reached 62·5 per 1,000 among men of 20 years' service and upwards. The difference between the figures named is 15, almost equal to the total saving effected, as shown above.

The following table taken from statistics given in the "Army Statistical, Sanitary, and Medical Report for 1866," is also equally demonstrative of the deterioration consequent on tropical life, showing that physical decay is much more rapid than in temperate climates.

Ratio of Deaths per 1,000 at different ages.	Under 20 years.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 upwards.
Anglo-Indian Army, 1863 ...	9·15	16·04	20·21	30·45	52·77	66·47
Anglo-Indian Army, 1861-64 ...	6·41	15·98	24·39	34·15	49·39	53·47
Army in Great Britain, 1859-63	3·01	6·09	8·25	12·23	15·61	19·69
Civil Male population, England and Wales ...	7·41	8·42	9·21	10·23	11·63	15·55
Civil Male population, England and Wales—Healthy Districts	5·83	7·30	7·03	8·36	9·09	9·86

From this it also appears that length of service tells on the soldier, as it did in former days, before the sanitary era in India. After 20 years' service, we have seen the old Company's Europeans died at the rate of 62 per 1,000; so in 1866, the mortality of soldiers, upwards of 40 years old, was 66 per 1,000; up to this period considerable gain is apparent; to be attributed to shorter residence and invaliding.

The change of medical practice was mentioned, as assisting invaliding, in accounting for the slight reduction on the total loss to the service. The abandonment of that system of medicine, well termed *quackery* by Ewart, must have tended to lessen

the injurious results of heroic bleeding and mercury. For instance, Mr. E. was bled twice, and had seventeen dozen 100 leeches in five days. This officer is described in the Surgeon's report, as "of weak constitution." He went to another station, "where another medical officer attended him, stating from the liver." Lieutenant ——— concludes :—"I had alto- fully 1,200 leeches at the least." Another gentleman, a medical officer, had 3,000 in less than six years. Leeches were formerly rowroot diet Having become completely anæmic with a pale, bloated, and lemon complexion, he was sent home. Sir Ranald Martin* observes, "this is an example of simple incomplicated anæmia, resulting from remittent and intermittent fevers, and their necessary treatment, by blood-letting, mercury, purgatives, and low diet."

Dr. Ewart† moreover adduces statistical evidence, showing a gradual reduction in the mortality caused by fevers in the Bengal Presidency, from 61·38 per 1,000, in 1817, to 7·60 per 1,000, 1,000. Here there is undoubted evidence, that something of the diminution of mortality must be credited to the progress of the science of medicine.

Thirdly, there is the lessened consumption of spirituous liquors. There is certainly less intemperance than in former years, and the liquor allowed is less deleterious. Formerly, every European soldier received a daily allowance of half a pint of spirits. We find Sir James Annesley animadverting strongly, in 1811‡ on the extreme impropriety of teaching the young soldier to drink a certain quantity of ardent spirits every morning, on an empty stomach, "the same measure being served out to the youngest drummer as to the seasoned veteran. The issue of the morning dram was, however, put a stop to in 1819, and of late years, malt liquor has been regarded as an essential of diet for all European soldiers. There are no means of ascertaining what proportion of the total gain may be attributed to this cause; but all who are aware of the evil results of *alcohol in the tropics*, will be prepared to credit some reduction of mor-

I think, it has been shown, that the greater proportion of the diminution of mortality of the Anglo-Indian Army during recent years may be referred correctly to the extension of invaliding, and secondly, that the gain which cannot be attributed to this cause, is amply accounted for by the system of consumption of spirituous liquors, or, indeed, by any one of these causes. But if this view be correct, the value, and even the advisability, of certain expensive sanitary measures, now in progress, may well be called into question. The facts, as here brought forward, may appear humiliating to sanitary reform-

EXPERIMENTS ON THE ACCUMULATION OF FOUL AIR IN ILL-VENTILATED ROOMS

By Murray Thomson, M.D., F.R.S.E.,

The experiments, the results of which are given below, were level.

The room in which the experiments were tried was of 4,290 cubic feet capacity. Besides the door-way it had two openings, each nearly two feet square: one in the front wall, about 18 feet

sepoys from the Regiment of the Bengal Sappers and Miners were shut up in the room, the door was closed, and all the apertures about the door well covered with wet clay; the men were not allowed to smoke. The thermantidote was then set in motion very slowly. It would have been better to have dispensed with the thermantidote, had it not been for the risk to the air as little as possible, and that, in fact, it did not move it experiments in which the thermantidote was not used.

The sepoys were confined in the room between three and four hours. At the end of this period the door was opened, and the thermantidote stopped; and while the men were still in the room, a sample of the air amounting to 1·68 cubic feet was slowly drawn off by means of an ordinary gas-holder, made to act as be taken from any height in the room. The air, as it was drawn off, was made to pass through an apparatus consisting of the —

1. A series of tubes filled with dry chloride of calcium: these retained the moisture of the air, and its amount was ascertained by weighing them before and after each experiment.

dilute solution of permanganate of potass, very slightly acidulated. This was intended to retain and destroy oxidisable organic matter, but in none of the experiments, although the solution obtained from the decolorisation of the permanganate. But although no indication of the presence of foul matter could be obtained by the permanganate test, yet the impurity of the air was very manifest to the nose. The odour in the room was heavy and unwelcome, but it was not markedly disagreeable.

3. The air was next passed through a tube filled with pieces of broken brick, broken to the size of small peas. These were drenched with strong sulphuric acid. The object of this was to re-dry the air before it entered the next part of the apparatus.

4. A series of three tubes, arranged like those with the chloride of calcium, were filled with small pieces of broken brick as in 3, but the brick in this case was drenched with a very strong solution of caustic potass. By this the carbonic acid in the air was retained. These tubes were also weighed before and after each experiment.

through the potass series of tubes, might carry off moisture with it, and lead therefore to an erroneous estimation of the carbonic acid, the air was made to pass through another series of tubes, filled with chloride of calcium, which were also weighed before and after each experiment, the increase of weight being added to the potass tubes.

Through this apparatus the air was passed very slowly: it

The number of experiments tried with men in the room was

the air of the empty room after it had been two days with the door wide open.

In the second set of experiments, no attempt was made to collect the air from the different levels. In these the scopys were shut up as before, but the period of confinement was reduced to two hours, as no thermantidote was kept going. The sample of air withdrawn measured 2·75 cubic feet. It was taken by displacement, that is, several vessels, the aggregate capacity of which was 2·75 cubic feet, were taken into the room full of water. The water was then emptied out, and as it passed out, the air of the room passed in.

The carbonic acid in the air was determined by Petenkofer's method. A measured quantity of lime water, the strength of which was known, was poured into the vessels containing the air, and these were then well shaken, so that the carbonic acid might be fully absorbed. The fluid was then taken out and rapidly filtered, and the lime, which was in excess of that required for the absorption of all the carbonic acid, was determined in the filtrate by a volumetric process.

In these experiments the moisture of the air was not directly determined; an attempt to state its relative amount was made by observation of the dry and wet bulb thermometer, hung up in the room, with a similar instrument hung up in the verandah outside. From these observations, the relative humidity was calculated by Apjohn formula in the ordinary way pursued in practical meteorology.

The results of all the experiments are given in the accompanying table. The general conclusion from them seems to be, that the foul air of a densely-inhabited room, very badly ventilated, does not seem to accumulate at any one level more than another.

Foul Air Experiments.

Date of experiment.	Number of feet from ground.	Carbonic acid in cubic inches per cubic foot.	Carbonic acid in parts of a cubic foot per 100 cubic feet.	Aqueous vapour in grains per cubic foot.
1865.	On ground.			
Oct. 30 ...	2	197	·114	178·51
,, 31	2	142·2	·082	211·20
Nov. 2 ...	7½	93·1	·054	156·9
,, 6	15	150·1	·089	141·04
,, 7 ...	18	120·8	·070	304·2
,, 8 ...	14	149·5	·088	384·2
,, 9 ...	10	128·4	·074	368·4
,, 13 ...	6	49·1	·0285	288·6
,, 14 ...	18	Not determined.		251·2

Second Series. No Thermantidote.

Date.	Carbonic Acid.		Humidity in room.	Humidity outside.
	Cubic Inches.	Cubic Foot.		
1869.				
March ...	277·5	·162	47	31
,, 6 ...	240·4	·085	32	24
,, 7 ...	274·8	·145	92	23

ON THE RELATIONS BETWEEN THE VARIOLOUS DISEASE OF CATTLE CALLED "GOOTEE," AND TRUE VACCINIA, WITH SPECIAL REFERENCE TO INOCULATION AND VACCINATION.

By Kenneth McLeod, A.M., M.D., L.R.C.S.E.,

Veterinary Surgeon, 3rd Native Light Cavalry.

It is perhaps necessary to offer some excuse, or rather an apology to the readers of a journal of human medicine, for sacrificing space and attention for a discussion relating more immediately to the disorders of the lower creation. But a study of epizootics is in itself so interesting a matter, that it hardly needs the additional zest of the consideration of their relations to epidemics to render them admissible or welcome. Besides, the great group of variolous diseases and disorders has, since the grand discovery of Jenner, and the consequent practice of vaccination, acquired a peculiarly human interest. It is here that sanitary science and preventive medicine hold their trump card. There is another reason, however, which gives a claim to the admission of such discussions to these pages, namely, that, with three or four exceptions, all that has been done in the way of the observation and description of epizootic diseases hitherto in India, has been done by the practitioners of human medicine; and in any epizootic out-break of exceptional severity, medical officers are always appealed to for opinion and advice.

This results from two causes: 1*st*, the paucity of veterinary practitioners; and 2*nd*, the greater fitness which a higher training bestows upon our own profession for the investigation and study of disease. In proof of the latter assertion, which is not meant as any disparagement to the veterinary surgeon, whose scientific education is comparatively less complete and more practical, are the two circumstances that the best descriptions of former epizootics have been due to practitioners of human medicine, and that the investigations, which were conducted under the orders of the Cattle Plague Commission in England, were, with the exception of the treatment, entrusted to doctors of human medicine. The cause of this is plain. Men versed in the study of human pathology need no additional training to enable them to investigate a new field, or apprehend the true significance of analogous or homologous processes or facts presented to them. Just as the comparative anatomist or physiologist must be, in order for success, a thorough human anatomist or physiologist, so must the comparative pathologist have a profound knowledge of human pathology to start with. Indeed, it is even more necessary in the latter case, because, while comparative anatomy has come to have, to a certain extent, a language of its own, the language of comparative pathology is entirely derived from human pathology, and not only the language, but the conceptions. While, therefore, the veterinary practitioner possesses, from special training and experience, that special tact which enables him more readily to detect and identify particular diseases, the student of human medicine is prepared to take those wider views of general questions which the study of diverse phenomena and similar, or dissimilar, disease elements present.

In the poorer districts of Austria both branches are practised by the same individual, and at the Vienna Institute men are taught veterinary in addition to human medicine. In these days of specializing and division of labour, I would hardly think a system like this either desirable or feasible, but a course of instruction in comparative pathology would be a most important and valuable addition to the curriculum of all medical schools. It is not my intention, in what follows, to go very deeply into the symptoms and features of epizootics in India, or elsewhere. Any one curious in these matters will find ample information in the reports of the Cattle Plague Commission—the last of which (third) is a most valuable work, illustrated by splendid chromo-lithographs—and in the "selections of papers on cattle disease" printed by the Governments of India and Bengal. I propose, rather in illustrating a series of propositions concerning variolous diseases, to focus facts which lie scattered through a number of not very accessible publications, upon some questions relating to inoculation and vaccination, which have either been already pretty well settled by experiment, or require additional experiment or observation to elucidate them.

1.—*The [illegible] known as "gootee" is specifically different from [illegible] and described.*

The [illegible] appearance by the succeeding descriptions, which present the general phenomena of these diseases. "Inflammation" has also been used in relation to "gootee" in the absence of a personal acquaintance as to their identity.

Cow-pox.	Gootee.	Rinderpest.
A [illegible]	A [illegible]	A specific eruptive fever, attacking cattle, [illegible] and other animals.
Capable of being communicated to the human subject by inoculation, and [illegible]	Capable of being communicated to the human subject by inoculation, and [illegible] case, attended with severe systemic disturbance, and extremely fatal;	Capable of being communicated to the human subject by inoculation, and [illegible]
After a period of incubation, [illegible] third day, leaving a [illegible] surrounding induration. [illegible] dry muzzle and impaired [illegible] day by a purely vesicular	After a period of incubation, [illegible] functional disturbance, [illegible] sooner or later, diarrhœa, [illegible] and aphthous patches [illegible]	After a certain period of incubation, [illegible] functional disturbance, [illegible] sooner or later, [illegible] and characterized by severe symptoms [illegible] day, composed of [illegible] mucous orifices are apt to be attacked with aphthous crusts [illegible] membrane, and an unusually dark colour of the blood are [illegible]

[illegible] ends of the series. The site of the eruption is different; the udder [illegible]

nal pustule, scab and [illegible] eruption, the eruption of gootee is more an exudation of [illegible] with [illegible] epidermis raised over a limited space with, in some cases, [illegible] smaller and [illegible] it. The cause of gootee, which I have myself examined, [illegible] consists about the size of a split pea, which could be moved by the finger and left a small raw pit. Other observers have described "deep pustules" (Lewis), "pimples or scabs" (Beasley), "minute excavations beneath the skin" (Green). Dr. Short of Madras, in describing an [illegible] small-pox—"Unanay"—[illegible] the eruption as "pimples" says that the skin appeared [illegible] to the feel as if small grains were beneath it, and [illegible] the eruption vascular and contained pustules beneath the skin. Other observers have given more prominence to [illegible] as to the character of the eruption. Dr. Cantor describes it as [illegible] succeeded by pustules, and Dr. G. Buist, writing of an epizootic in Mysore, says that the skin became covered with a pustular eruption. He significantly remarks that the disease was more like plague than small-pox. This leads me to the second proposition which I propose illustrating, namely:—

II.—*The disease of cattle called "gootee" in India is identical with the rinderpest of Russia, and the cattle plague of England.*

This identity, if established, will enable me to take advantage of the observations and experiments conducted so carefully in Europe. Dr. C. Palmer, in his report on the Calcutta Epizootic of 1864, dated 7th October, 1865, was the first to point out this fact. After carefully describing the features, symptoms, progress, post-mortem lesions and mortality of the disease, as observed in Calcutta, he states in his summary that "the symptoms, progress, and great fatality all lead to the conclusion that it is the same disease as that known as the rinderpest, which always exists in certain parts of Russia, and is the same epizootic as that at present raging in England." Subsequently, Veterinary Surgeon Gudgin, describing an epizootic disease in Burmah, states "that it is analogous to, or identical, with the rinderpest now raging in England" (1865). Veterinary Surgeon Thacker entertains no doubt that the epizootic observed by him in Madras, and which corresponded closely in every respect with our Bengal plagues, were "rinderpest," and he calls them by that name. Veterinary Surgeon Linnell, in describing an epizootic of "gootee" in 24-Pergunnahs recently, expresses an opinion that it is the same disease as rinderpest. I might place the symptoms, &c., of the two diseases side by side without finding it necessary to alter a single term except in so far as the English disease has been made the subject of more accurate and complete inquiry and description than the Indian. Any one curious to verify the matter may compare the description of "rinderpest" in the reports of the Parliamentary Commission, and of "gootee" in my paper published in a Supplement to the *Calcutta Gazette*, dated 19th April, 1865, and find the two diseases agreed to the minutest detail. There is, however, one point of importance which demands more special notice. Many epizootics in this country, among them the "Calcutta Epizootic of 1864," *exhibit* [illegible] *the skin.* The symptoms and features of these are in every respect identical with those of "gootee;" with this single exception, and perhaps the greater virulence and more unsparing character of the non-eruptive disease.

It is interesting to note that, while Dr. Palmer, describing a non-eruptive disease, declares its identity with the English malady whose eruptions are described, and figured by Drs. Sanderson, Murchison and Birdsowe, and which is called an exanthematous disease, and compared with small-pox, Dr. Murchison discusses the identity of the English cattle plague with "gootee," as he finds it described by Drs. MacPherson, Gibson and Irwin. (Appendix to Third Report of Cattle Plague Com-

missioners, page 76-77). This would point strongly to the similarity of the two Indian diseases, eruptive and non-eruptive (puschima and gootee), if other evidence were wanting. Of course, if the disease is so virulent that the animal dies before the 4th or 5th day, the eruption has *not had time to develope*. Four days is stated by Dr. Palmer to be the average duration of fatal cases in Calcutta. At the commencement of the plague in England, the eruption was over-looked, and not until Mr. Ceely, of Aylesbury, prompted by the descriptions of old invasions of the disease, directed attention to the fact, was this feature detected or described. "It is now ascertained," Dr. Murchison remarks (op. cit., page 75), "that in *most cases* of cattle plague, *not fatal within 3 or 4 days*, there is an eruption on the hide in many respects resembling small-pox."

No mention is made of an eruption in the first two reports of the Royal Commission. Italian physicians, describing the cattle plague of 1811, and English physicians, describing that of 1745 and 1770, distinctly allude to a pustular eruption. Dr. Layard (quoted by Dr. Murchison, op. cit.) says that "it is an eruptive fever of the variolous kind, and, notwithstanding the exanthemata or pustules, may have been so frequently overlooked, yet *none ever recovered* without more or less eruption."

It is important to note that in both these instances the eruption was overlooked. This is not to be wondered at, when in many cases it consists merely of subcutaneous indurations, or of scabs and incrustations. Still it is of the greatest importance in determining the character of an epizootic to search most carefully for signs of skin disease, and describe them accurately. I suspect strongly that the term pustule has been used to signify what is not a true pustule. Dr. Sanderson (op. cit., page 12) quotes many continental authorities, who describe the eruption of rinderpest in "its home," and they employ terms identical with those used in England and here (tubercles, crusts, dry pustules, &c.) One observer (Falke) makes the observation that *in some, not in all*, epizootics an eruption appears. Seer speaks of a pustular eruption on the shoulders as occurring in *some* animals *after recovery* from rinderpest. Another authority speaks of their occurring frequently. Another in *certain districts*. Dr. Bristowe (op. cit., page 81) says that "a cutaneous eruption is present in *a large proportion* of cases," and compares it to modified small-pox. The eruption, then, seems from the above not to be an *invariable* feature, and to be more observable in certain epizootics and certain districts. This is clearly brought out by Professor Varnell, who visited towns around Aylesbury for the special purpose of studying the eruption. He found that it existed in some cases, and not in others, and describes those cases which he found covered with "crusts" as "mild cases." It is more probable that, owing to the malignancy of the disease at its commencement, no eruption appeared, than that the many careful and skilled observers, who had their attention continually directed to it, should not have noticed such an important feature. Continental observers speak of the "disease assuming an exanthematous character," from which we may conclude that it does not always do so.

Turning to Indian experience—Veterinary Surgeon Thacker, whose experience of the disease probably exceeds that of any other observer, describes the disease as "accompanied at certain seasons of the year with falling off of the hair and formation of pustules on the skin." Veterinary Surgeon Farrell, in describing an outbreak of gootee in and about Diamond Harbour, states distinctly that in some places no eruption was observable, and in others pustules appeared. Many observers have noticed that an eruption appears in some cases, or at one period of the disease or outbreak, and it has been stated by several that epizootics, in which an eruption is absent or slight, are more malignant than those in which it is well marked, and that cases in which the eruption is copious do better than those in which it is suppressed or absent.

Professor Simonds, in his treatise on ovine variola, says that "the formation of pustules ought to be regarded rather as an adventitious than an essential feature of the disease," (Simonds on variola ovina, page 77), and Dr. Aitken (Science and Practice of Medicine, 3rd edition, page 272), states that the virulent form of variola ovina never produces pustules. These facts and considerations would justify the conclusions—

1. That eruptive and non-eruptive epizootics, whose features are otherwise the same, are varieties of the same essential disease.

2. That suppression or absence of an eruption is a sign of greater virulence.

3. That the occurrence of a skin eruption, or otherwise, will depend on either the essential nature of the epizootic on locality or on season (perhaps on the degree of concentration of the poison.)

How do these conclusions, which seem amply supported by observation from different quarters, tally with what is known in human pathology? It is a very well founded and wide spread belief, that the suppression or residence of an eruption in an exanthematous disease is a perilous event, or the metastasis of of rheumatic or gouty action from external to internal parts. The cholera poison is sometimes so pernicious that, without the development of vomiting or purging (which we may consider the homologue of the cutaneous eruption of exanthems), the victim is struck down and dies—*Cholera sicca* on the other hand, in the exanthemata, *more particularly small-pox*, the more severe the eruption the more formidable and fatal the disease. Sydenham, it is true, describes "*Variolous fever*" or *Variola sine Eruptione*, but it does not appear that it was more virulent or fatal than ordinary variola, and certainly not so much so as *Variola confiua or maligna*. I confess myself unable to solve this pathological problem satisfactorily, and with reluctance abandon the attempt, and leave it as an instance of one of the questions to which comparative pathology must eventually supply an answer.

(*To be continued.*)

CASES FROM PRACTICE.

STRICTURE OF THE URETHRA; DEATH FROM URETHRAL FEVER AND UREMIA.

By Dr. Fayrer, C.S.I.

Some months ago I was requested by his medical adviser, to see a gentleman who was suffering severely from urethral stricture of several years' duration. The patient was about 35 years of age; a stout, flabby, pallid and unhealthy looking person.

Several years previously I had seen him, and had then passed instruments up to No. 10. He was suffering from an irritable stricture, partly organic, but greatly aggravated by muscular spasm. Again, during the rainy season of 1868 I had seen him when in similar trouble, and was unable to introduce any instrument owing to the extremely irritable state of the structure. He was exceedingly anxious to be operated on. I advised him to wait until the cold season, unless some urgent symptom should render immediate interference necessary.

I saw him again at 2 p.m. on the 10th day of the month, on the occasion I am about to describe, and found him looking in his usual state of health, but he was very nervous, restless and irritable: the bladder constantly attempting to empty itself, and the stricture consequently causing him extreme distress.

His bowels had responded to an aperient that day.

I introduced and without any difficulty, passed instrument No. 10, into the bladder, being conscious both of the

[illegible] as well as the [illegible] of the [illegible] were [illegible] and [illegible]. The [illegible] [illegible] [illegible]

trematode entozoa, genus *distomum*, species resembling *distoma hepaticum*. The largest of them is almost an inch in length, half an inch in breadth, lanceolate in shape, large and rounded anteriorly, where it is suddenly or abruptly contracted so as to constitute a short neck. There is a well marked oral aperture —and also a large and more distinctly marked imperforate abdominal sucker, about a line from the mouth. This sucker is situated more anteriorly than in the ordinary *distoma hepaticum*. The ramified intestine is distinctly traced.

This entozoon does not very frequently invade the human subject. In the mature condition it is found in the four great classes of the vertebrata. When found in man, it usually occupies the gall bladder and bile ducts; but is occasionally observed located in the small intestines.

I have never before heard of such a large number having been taken from the digestive organs of the human subject.

CASE OF HYDROCEPHALOID DISEASE.

By Dr Mathew,

Civil Surgeon, Darjeeling.

Under the title Hydrocephaloid disease, Marshall Hall grouped the symptoms sometimes observed in young children, as the result of a sudden withdrawal from the brain of its normal blood supply. I cannot find that the new nomenclature of disease recognises this title, or gives any substitute for it, so that, if I were called upon to register the case I am about to refer to, I should be in a difficulty. A child, aged six months, had, in consequence of his mother's delicacy, to be weaned. From his birth he had been fairly healthy. For the first three weeks that he was on artificial diet he seemed to thrive; but, one day in the fourth week, he was attacked with vomiting and purging without any apparent cause. The purging was checked by remedies; but by an unfortunate mistake on the mother's part, the child for thirty six hours received no food, but very thin arrowroot and water. I saw him at the end of that time. He was perfectly cool, and, except for some languor, might have been pronounced well. I ordered him milk in small quantities at a time and diluted, but his stomach rejected it instantly. Various combinations of infant food were tried with the same result, and there was a return of some watery purging. Twelve hours later he was alarmingly low. He lay with his eyes half closed in his mother's arms, breathing somewhat heavily; his pupils were found to be very sluggish on exposure to light; his extremities were cold. His head was, if any thing, cooler than natural; there was no separation or lifting of the fontanelles, pulse small and slower than it should be at his age. Altogether it was a typical case of mock hydrocephalus, as described by West, Gooch, and Marshall Hall. Strong chicken broth and brandy and water were given by the tea-spoonfull every twenty minutes. Baths of hot water and mustard were used, and a mustard poultice laid on the chest. I noticed that the child rallied, but fell back again twice every twelve hours, with a strange regularity. It is almost needless to mention, that there were no febrile phenomena of any kind. No medicine was given, except small doses of Dover's Powder. The stomach gradually became less irritable. The purging ceased; and after three or four days the child was out of danger. A *dhye* was procured; he was again put to the breast, and is doing well since.

No other line of treatment except stimulation would, I believe, have saved him. If, misled by the vomiting and sluggishness of the pupil, I had concluded that there was active brain disease, and prescribed accordingly, the result would have been very different.

PULSATING ABDOMINAL TUMOUR.

Some weeks ago, a Constable came into hospital with the above ailment. The tumour was well defined, as large as a cricket ball, and situated above the umbilicus. I desired Sub-Assistant Surgeon Soorjee Narain Singh, at that time in charge of the dispensary, to diagnose and report upon the case. He decided that it was a fœcal tumour, lying upon the aorta, and pointed out with great clearness and accuracy all the reasons why it could not be an aneurismal or other growth. The Sub-Assistant Surgeon's diagnosis was proved by the results of treatment to be perfectly correct, for the tumour soon disappeared. There was nothing very peculiar about the case, but such are by no means common in this country, (if I remember right, the Sub-Assistant Surgeon had not previously seen a similar one,) and I consider it worthy of record as creditable alike to this officer's professional knowledge, and to the clinical teaching of the Medical College.

ABSCESS OF SPLEEN WITH EMPYEMA.

By the Civil Surgeon,

Bhawulpore State.

Mogul Merassee, aged 26 years, was brought for treatment on June 3rd last. He directed attention to his spleen, which was enormously enlarged—it extended anteriorly beyond the mesial line, and downward, nearly to the crest of the ilium. The organ was acutely tender; there was fever, anxious countenance, and dyspnœa. A puffy swelling existed in the left hypochondriac region—between the seventh and eighth ribs—where an abscess seemed to be pressing. At first, attention was addressed exclusively to the inflamed spleen, but on exposing the patient's body for closer examination, the entire left side of chest was seen to be distended and fixed in respiration—the intercostal spaces were tense, the nipple was pushed up, and there was absence of vocal thrill. In short, all the phenomena of fluid effused into the pleural cavity were complete. The man's history did not clearly explain his condition. He had had fever, followed by tumefied spleen some ten months previously. The spleen had remained quiescent for about nine months, when he was seized with symptoms answering to pleurisy of left side of chest, high up, in sub-clavicular region. Acute pain had extended downward *into the spleen*, and the entire side from chest to abdomen soon became synchronously distended. He could not define which cavity had *first* grown prominent; but all his suffering and distress were referred to the spleen. He received appropriate treatment until the 7th June, when deep fluctuation could be felt below, in left iliac region. By palpation with both hands, the fluid movement was transmitted throughout the splenic mass. An exploring needle determined the presence of pus in the iliac region, and the spleen was then tapped with a trocar in its depending part. Only two and a half ounces of clear pus escaped, which afforded hardly any relief to his distressing symptoms. Meanwhile, the upper fluctuating spot was becoming larger and more declared, and on the 10th, a trocar was introduced, which grated over the seventh rib. Healthy pus now flowed abundantly, and after one pound thirteen ounces had been drawn off, the canula was secured in situ. This operation gave marked relief to the distended chest; all the matter seemed to come from the pleural cavity, while there was little decrease in the size of the spleen. Next day, the 11th, one pound four ounces more were removed through the *same aperture*, which made a decided impression on the bulk of the spleen. The thoracic and abdominal cavities were therefore in communication. Was the communication *direct* by perforation of the diaphragm, or was it parietal, by burrowing sinuses?

Inoffensive pus continued to flow, to the amount of six pounds fifteen ounces, during the following fourteen days (occasionally missing a day); when the patient was taken away by his friends.

The compressed lung had rapidly expanded, the circumference of left chest had decreased by 2½ inches in a few days, and the heart's sounds were heard on left side of sternum. The canula was withdrawn on the 15th, as it was difficult to keep it in position. A compress was placed upon the spleen, and the patient took chlorate of potash with a little infusion. The wound was syringed daily with Condy's solution, and an *antiseptic* poultice was applied. Purulent fluid continued to be discharged to the end, by pressure upon the spleen—none seemed to come from the pleural sac—but respiration was sometimes embarrassed by inward pressure upon the diaphragm, before the collected matter was expelled. When the patient was last seen, on the 25th June, he was in a promising condition. He was free from suffering, respiration was tranquil, air was heard all over the left lung, the spleen was considerably reduced, there was no hectic, and he was making flesh.

The formula for the antiseptic poultice above mentioned, is—Gunda Biroza melted 1 part, warm linseed oil 2 parts; mix. Add a sufficient quantity to the ordinary ingredients of a poultice, freshly made. Gunda Biroza or Venice turpentine is a less intimate exudation of Pinus Longifolia, common in all bazaars. This antiseptic agent will be found a cheap and

NOTES ON THREE CASES OF CHOLERA TREATED BY HYPODERMIC INJECTION OF LIQUOR AMMONIÆ

By SURGEON A. CRICHTON,
Civil Surgeon, Agra.

I.—A [illegible] girl, aged 13, was [illegible] Hospital at the Roman Catholic Lodge at Agra on the morning of the 18th August. When I saw her she was collapsed, with no pulse to be felt at the wrists or at the temples; her voice, however, was clear. Her usual complaints, viz. spasms in the legs, cramps, vomiting, and purging, were suppressed, but there was, with the diminished excitement, a dull, heavy expression of face. Having prepared the solution, and sterilized the syringe, I injected [illegible] as recommended by Dr A. R. Young, of Cork (see Royal Rifles, 19 minims were injected into the [illegible] and 15 minims soon after on the back of the hand. The girl complained a little of the pain, but did not withdraw the hand. In a few minutes she became somewhat less collapsed, and expressed herself as better, and in the course of half an hour her pulse had returned at the temples, but not at the wrist. Two hours after this the pulse was perceptible at the wrist, and the patient was soon out of danger.

In [illegible] caused rapid breaking of the skin, and death of a portion, of the size of a small almond. The girl did not ultimately survive, for, during convalescence, she had violent hæmorrhage from the mouth and nose, and died from exhaustion. I observed no very permanent effects from the ammonia, but there was a very great improvement after the injection, which, I think it fair to believe, may have been due to that treatment.

II.—On the 13th August, I found a girl of 13 in a state of collapse in the same institution, but not actually pulseless. [illegible] treatment was of no use, I [illegible] seeing that the pulse was gone, I injected 18 minims of ammonia near the shoulder in two portions. The girl was quite in her senses, and said she felt better, complaining not of the injection, but only of the mustard applications. I could trace no general effect, and no return of pulse from the ammonia.

About two hours afterwards, as she was much worse, I [illegible] 20 minims near the former situation, but no effect whatever could be observed, and the patient died at 2 p.m.

III.—A native traveller was admitted into the Thomason Hospital with cholera, nearly collapsed, but with pulse quite perceptible. 20 minims of ammonia were injected near the shoulder by Sub-Assistant Surgeon Beepin Beharry Bose, in my presence, and the case was watched carefully by him, and Sub-Assistant Surgeon Daniel Chandler Sinnett, M.B. They observed no improvement in the pulse or in the man's general condition. The injection was repeated when he was further exhausted, but without any effect, and the man died.

Though these cases are not encouraging, I hope that further experiments will be made with ammonia, and other substances used by the hypodermic method, as it appears to me this is the [illegible] which we may look to for success.

The liquor ammoniæ used was weak, the density being nearly 1,000 [illegible] and I [illegible] liquor ammoniæ fortior, [illegible] to the test. I [illegible] ammonia prepared and preserved for the purpose.

STRANGULATED INGUINAL HERNIA AS IT IS MET WITH AMONG NATIVES: ITS TREATMENT BY FULL DOSES OF OPIUM

By Dr. R. [illegible],
Civil Surgeon, Salem.

[illegible] [illegible] [illegible] [

The Indian Medical Gazette.

Acknowledgments.

The Lancet.
Medical Press and Circular.
New York Medical Journal (July.)
Canada Medical Journal (July.)
Proceedings of Sanitary Commissioner (July.)

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Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

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THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

"You have chosen the patronage of politics, but of science. Among those who have possessed wealth in it, and in our own particular department, we can name some of the brightest ornaments of British history; and I will not [illegible] the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

We have received a letter from Messrs. Thomson and Co., in reference to the article on drinking water in our last number, stating that the difficulties of cleaning and re-charging Dr. Macnamara's filter have been much over-rated. Messrs. Thomson are the manufacturers of the filter, and practically, therefore, may be better judges of its working than the inventor.

They state:—"The filter in the Martiniere has been twice thoroughly cleaned, and set to work in half an hour. The two at the Medical College have given no trouble, those at the Free School have been at work six months, and have not required to be touched, "and the filter used in the 70th Regiment at Agra, "has been working admirably since April."

In the course of a few months, the filter will have been well tested at other stations, and all its qualities proved.

THE SANITARY COMMISSION OF BENGAL.

We copy the following remarks from a recent article on Sir John Lawrence in [illegible] Magazine:—"He (Sir John Lawrence) directed the formation in the three Presidencies of Sanitary Commissioners for the [illegible] scavenging out houses, and [illegible]

"These Commissioners existing in one form or another during his tenure of office have been indirectly of the greatest advantage; they have brought to the notice of the authorities evils which had long been unchecked—a state of insanitation affecting Europeans as well as Natives. At their suggestion a scientific examination of the drinking water at all the stations has been initiated, and this has already borne abundant fruit;* every sanitary question is now forwarded for their opinion, and the fruit of their counsel has been manifested in the decrease of sickness and mortality, alike in the barrack and in the jail, in the town, and in the cantonment."

It would be an interesting study from the characteristic phraseology of this article to trace it to its source. At present, however, we would rather concern ourselves with the accuracy of this and similar statements, which have of late been thrust forward on the public.

In the first place, let us refer to the instance of Simla, where the late Viceroy and his "Imperial Sanitary Officer" (*vide* G. O., 10th September, 1868) have spent a considerable portion of their lives during the past five years. In 1865, the Sanitary Commissioner reported of Simla that "the sides of the hills are everywhere studded with human excrement;—it is not difficult to understand how filth, lying in the beds or on the hill sides, from which the streams are fed, should poison the whole waters of the station." Nevertheless, every year since similar nuisances have been reported and commented on, and yet the present sanitary state of Simla and its drinking water is as disgraceful as ever.

Sir John Lawrence and his sanitary staff when absent from Simla resided in Calcutta. Does this city owe one single sanitary improvement to their presence? Dr. Macpherson, in 1861, pointed out the deadly practices then in existence, but which are to this day perpetrated with regard to the pollution of the Hooghly, &c., &c. Under the municipal system of drainage improvement will doubtless be effected in the course of time; but it only wanted a little executive knowledge and energy on the part of the Sanitary Commissioner to have put a stop to the most crying evils long ago.

We have singled out Simla and Calcutta as instances in point, because they were evidently directly amenable to the influence of the late Viceroy and his Imperial Sanitary Commissioner. If we turn, however, to any other city or cantonment of the Empire, we find a similar state of things. Take the case of Umritsur;† witness the exposures that were made of its state during the recent outburst of cholera; who can say that cause and effect were not here strongly marked? yet the Government of the Punjab is by some means able to throw the whole blame on the Government of India, and to assert that it is owing to its false system of economy, that sewerage, drainage, and water improvements were not carried out years ago.

The Sanitary Commission was organized in February, 1864, to give effect to the 39 Articles recommended to be at once introduced by the Royal Commissioners appointed to enquire into the state of the Army in India in May, 1859; their report was published in May, 1863. But what becomes of the Sanitary Commission's laudation of itself and of its voluminous reports,

* [illegible] Drinking Water in the next number.

† See the [illegible] at page 221.

[illegible] nothing to do, although they certainly were submitted to the Secretary of State with its approval?

When the Secretary of State addressed the Government (No. 14 of the 23rd April, 1868), as to the progress that had been made in sanitary matters in India, the Bengal Sanitary Commission replied by forwarding extracts from their annual reports, showing that many things were doing, and that nothing had been done.

Nevertheless, if the country chooses to entertain highly-paid officials to comment on the vital statistics of British troops, we may leave the subject in their hands. There is another view of the question, however, we must consider, entailing, as we believe it does, the gradual destruction, or, at all events, deterioration of the Indian Medical Service, owing to the functions affected by the Imperial Sanitary Commissioner. We can no longer view the slow but certain [illegible] and we consider it our duty clearly to express our opinion on the anomalous position assumed by that officer with respect to the Medical Services of this country.

The first President of the Sanitary Commission, a distinguished member of the Bengal Civil Service, commenced his sanitary career in 1861, as the presiding officer of the Punjab Cholera Commission. In 1864 he joined the Bengal Sanitary Commission, in 1866 he was promoted to the Government of Oudh, and [illegible] he was transferred to the Supreme Council of India, receiving charge of the Home Office at the same time.

It was last year that the emanations from that department began, which appear to us to have been so inimical to the interests of the Medical Service. There has since been many a painful instance of a desire, in fact of a steady resolution, to exalt the sanitary above the medical administration; but none, perhaps, of such significant importance as when the Statistical Officer to the Medical Department was rudely withdrawn from it.

Under a system of this kind, the Medical Department is almost ignored. Men who, from long experience and intelligence, have been promoted to the administrative ranks, find themselves silenced, their advice neglected, and, in fact, feel themselves comparatively useless for all practical purposes; while the Civil Medical Officers, whose proper position is immediately subordinate to the Medical Department, and who look to it for advice and assistance, are enjoined to report direct to a local Sanitary Commissioner, to obey his instructions and circulars, and it may be even to prepare his reports for him. Indeed, so much has happened of late to the Service which 'a fellar can't understand,' that we confess we look with suspicion to a recent order of Government which we should otherwise have welcomed, and which runs as follows:—

"But whatever reasons there may have been when the Sanitary Department was first established for placing a Civilian or a Military Officer at its head, those reasons do not now exist. The Governor-General in Council thinks it would tend to facilitate the business of the department if the Sanitary Commissioner with the Government of India should be a Medical Officer. * * *

This is complimentary to the Profession, but well nigh destructive to the Service, for this reason: every question, small or great, medical, administrative, educational, economical, &c., &c., submitted for report to the heads of the British or Indian Medical Departments, is finally sent to the Imperial Sanitary Commissioner for his opinion, before the Supreme Government will act on the judgment of those who ought to be their medical advisers. This was objectionable when a Civil or Military Officer presided, and it is but little better when a junior Medical Officer occupies the same post.

Practically, the Imperial Sanitary Commissioner has become the head of the Medical Department in India. He can overrule the advice given by the British Inspector-General in all but discipline, and he has still greater power over every branch of the Indian Medical Service. The fallacy of this position must be apparent. The sanitary administration of the country cannot be carried on without the aid and authority of the Medical Department, and the Sanitary Commissioner can only précis, or deal second-hand with, the reports which he requires from it. Moreover no one man in the service, or out of it, however great his talent and tact may be, is capable *alone* of being trusted as the responsible adviser to the Government of India, it may be in direct opposition to the Inspectors-General of the British and Indian Medical Services.

For these reasons we view with dislike and distrust the separation that exists between the medical and sanitary administrations in this country. The enhancement and elevation of the sanitary over the legitimate administrative officers has caused a gap between them which must ever be widening, unless their relative positions are re-arranged; the one is grasping for power, the other is powerless to resist; and it is the knowledge that sanitation cannot exist without the co-operation of the Medical Department, which makes the Service desire they should pull together, and not be working at variance as at present: weakness being the inevitable result of want of union.

That the sanitary office is a most convenient one to the Government no one can deny. An office created by, perhaps, the first administrator in the Civil Service, is sure to be of utility. It is the repository of sanitary matters throughout India, and it gives publicity to all interesting work in this department which had not previously been placed before the public; nevertheless, this might all have been done in connection *with* the Medical Department, and not by officers of its own branch acting *in opposition* to it. But if there must be a separate sanitary department in India for goodness' sake let it be kept to its proper sphere; keep it to sanitary conservancy, engineering, and inspections, but do not elevate and multiply the duties until it is beyond its power to perform them.

If Government have the sanitation of the country really at heart, it should follow the practice pursued in England and every other civilized country in the world, and make its sanitary service a subordinate branch of the medical. Dr. Parkes, no mean authority on these matters, does not consider it compromises his position to work under the medical authorities of the Horse Guards; but he probably feels, as every right-minded man would do, that his rare talent cannot be better spent than in supporting and adding to the influence, and thereby strengthening the Director-General, and the Department to which he belongs.

We would add one word more: it is an old but no less true maxim, and one which no Englishman living can more fully appreciate than our present Governor-General, that all successful rulers, whether civil or military, have achieved great

victories, because they have had the power of gaining the confidence, and, at the same time, of being able, fully and implicitly, to *trust* those who have served them; without this feeling of mutual confidence between subordinates and their rulers, no great ends can ever be attained; and does this feeling exist at present between the Indian Government and the Indian Medical Department?

CONTAGIOUS DISEASES' ACTS.

As evidence accumulates on the working of these Acts, local and limited as they have been made, we become more and more distrustful of the enthusiastic reports by which their first introduction was proclaimed. After the glowing language in which success was announced, the sanguine and the credulous must be somewhat startled at finding themselves suddenly brought face to face with the proceedings of committees appointed to enquire into causes of failure. Yet, from all the information hitherto given to the public, it would seem that the course of events has been precisely such as might be expected from very partial legislation. No doubt, a commencement on a moderate scale was desirable. It was only prudent that the earlier attempts of authority to reduce a disorderly class to discipline and impose restriction on license, should be guarded from internal causes of failure as well as from danger of wide-spread alarm to the peculiar susceptibilities of Englishmen. It was well too that the State, acting in the interests of the public, in view of the great injury they suffered from the prevalence of syphilis in the army and navy, should direct its first efforts against the sources within easiest reach of the soldier and sailor. Military and naval stations, therefore, became the scenes of operation.

For a time all went well. The influence of detection and hospital treatment of diseased women was speedily felt in the limited communities among which the Act was enforced. Unfortunately, the necessity for exhibiting results to an expectant public, with a willingness to elevate the character of the work done, and, perhaps, to conciliate the contentious and rather cloudy-minded class of moralists who, by aimless talk, endeavoured to lead the movements in the direction of their own imaginings, induced medical officers to inflate their official narratives with a pretentious morality and a turgid style of writing, which, betraying the scanty acquaintance of its authors with the natural history and spontaneous tendencies of prostitution, confused the records, and impairs confidence now in their data, on topics which call for dispassionate treatment as questions of calm scientific truth.

Soon, however, the pictures of success began to lose some of their brighter colors. Hospital figures appeared less favourable than at first, and difficulties of working came to the surface. Explanations were copious and satisfactory enough in assigning a cause for the falling off, but less so in shewing that it arose from defects which could not be eliminated from the existing system. Local laws might reduce disease within the limits of their operation, but they could not prevent its importation from without, while places in free communication were unprotected. Organisation was wanting. There was friction in the machinery of the hospitals. The authority of individual officers was ill-defined, and discord arose where conjoint action required the greatest harmony. It was necessary to work a tentative measure with economy of money, and portions of general hospital were set apart for syphilitic cases in preference to separate establishments. In some instances the gratuitous service of the profession was called into requistion, in others well-paid officers were employed, and hence there arose a sense of inequality and injustice, and a disinclination to conceal any longer from view the evils of piecemeal legislation.

The more closely we scrutinize the printed report, the more evident does it appear, that the fundamental defect, which underlies the leading faults now brought to light in the insufficiency of a system designed to guard only a small section of the community from an evil which exists throughout the length and breadth of the land. The special object of the Act and indeed all it pretended to do, would, we admit, be accomplished if disease were reduced to a minimum to the army and navy; but we are now in a position to maintain, on the evidence of facts, that so long as our soldiers and our sailors ashore mix freely with the general population, their exemption cannot be secured by laws which are local and very circumscribed in their action. It is true that, from defective details of administration, full benefit may not have been realised from the system in use, and that measures of internal reform may yet bring about partial and temporary improvement; but they cannot touch the organic mistake of endeavouring to keep a small unisolated neighbourhood clear of contagious disease which surrounds it; indeed it is on record that the very measures undertaken for this purpose, tend to concentrate disease on the spot itself, for while a few women from outside places are drawn by a healthy attraction to the hospitals themselves, a larger number are brought into the vicinity to fill the vacancy and supply the demand created by the withdrawal of its diseased inhabitants.

The Parliamentary Committee for the present decline, on account of its magnitude, to approach the question of extending the Act to the civil population; but that they recognize in the facts before them, indications of its necessity is seen in the proposal to enlarge the limits of the present Act by extending it to a distance of fifteen miles from stations, and increasing the number of the latter. It is no disparagement to the present Acts to regard them as insufficient even for their special purpose. They have been eminently useful in shewing that very valuable results may attend this limited and imperfect working, and have silenced the clamour of pseudo-philanthropists, who hold the power of doing vital mischief to one's neighbour to be an integral part of political liberty; and if they have proved themselves incapable of perpetuating success in their restricted form, they have pointed the way to it in a legitimate and natural extension of their scope; while their results may well allay the doubts and fears of timid or sceptical legislators in dealing with the general population of the country.

The proposed reforms in hospital management are simple, and if too much be not expected of them, may effect their object; we greatly doubt, however, that civil authority will concede to a medical officer the power of discharging a woman from the liabilities of a prostitute on any resolution she may form in hospital. It is contended that many a woman, "restored to a virtuous life," would object to apply to a justice in an open court for a discharge from attendance, but would feel no such objection to being discharged by the medical officer under whose care she had been. This may be true, but the grounds of application must be more or less matter of assumption or credulity on the part of the medical officer. Proof of such a [illegible] in the majority of cases, must be exceedingly difficult, and

practice of periodical inspection of soldiers for venereal disease. We cannot discover or conceive the grounds on which this proposal rests, and cordially endorse the criticism of the *Medical* [illegible] If the [illegible] is to be [illegible] by local officers [illegible] inspection, unless it be proved that the soldier suffers more severely from syphilis in consequence of concealment than he would under earlier detection. So far from this being the case, [illegible] is the opinion of those best qualified to judge, that voluntary concealment does not and cannot exist in the ranks to any appreciable extent. A soldier does and must report himself sick soon after he is aware of the fact; and if he unduly delays to do so, punishment follows on his discharge from hospital. And if it be contended that disease being detected on inspection may be prevented from infecting the constitution of the man, it can only be by persons unacquainted with the literature of the [illegible] has produced, that the poison is absorbed long before any local sign of its reception appears. This teaching of recent science is in strict accord with the negative results which were obtained from inspection in days when it was practised, when simple observation was the only guide, and no doctrine existed to obscure it.

If it could be proved that inspection were either necessary or useful, it would not be wise to urge, in opposition to it, the great dislike with which medical officers and men regard it. This feeling has been treated lightly by three surgeons, whose testimony would appear to have led the Committee. In common [illegible] we know the practice to be looked upon as absolutely odious in the ranks. There must be many of our contemporaries who with ourselves can recall the scene of a regimental inspection. How the line of men, exposing themselves to the medical officer at the word of command, showed by their faces the sense of their position which was engendered. The picture was not without its ludicrous features, and these were appreciated in the waggish titter of some light-hearted boys, whose merriment, there was no denying it, was mainly at the expense of the officer who was forced with a grave face to conduct the proceedings. But it had, too, its serious and more important side. Ill-humour shewed itself in many a look of sullen submission, and worse than all was the picture of degradation, [illegible] we speak for ourselves, must have been strongly reflected in our own; for, brave it as we might, there was no escape from the consciousness that we were instruments of an offensive system.

From the proceedings of the Sanitary Commissioner with the Government of India, for June last, we derive some information on the working of the Contagious Diseases' Act in Indian cantonments. Here, as in England, results have been found unsatisfactory, and the Government has called for an opinion as to whether "any further orders should be issued on the subject of [illegible] shape, returns to show the effects in the diminution of disease produced by the measures now in force." The Commissioner [illegible] from them it is easy to understand the dissatisfaction of the authorities. Here, however, it is not possible to prove a case against the principle of local Acts, for the administration of them has been so loose and desultory, that no conclusion of necessary inefficiency can be drawn.

Not less loose and desultory, we are forced to observe, is the manner in which the Commissioner handles the figures he receives. He tells us that the admissions into hospital, among European soldiers, between 1852 and 1858, varied from 261 to 133 per 1,000. From the latter year to 1864 it never fell below 250. In 1861 it was as high as 369. "The occurrence [illegible] per 1,000 in 1867, therefore, presents a *remarkable improvement*." We often see reason to wish our chief sanitary authority were endowed with some little dexterity in detecting the meanings of figures. Here the rate of admission varies during a period of years between 133 and 369. In 1867 it reaches 166, that is to say, it is within the range of fluctuation of the former period, nevertheless it is confidently offered to us as evidence of "remarkable improvement."

The Commissioner, in view of this remarkable improvement, had indulged in a hope "that with the development of Lock Hospitals an increased care in carrying out the rules for the prevention of the disease, a further diminution would be effected. This expectation, however, has not been realized." This is unfortunate no doubt, but if the Commissioner had based his expectation on a full knowledge of the existing laxity in working the Act, and not on a misinterpretation of the figures of 1867, he would have had to record recurring failure, but not to lament disappointed hope. A few unsatisfactory statements follow, the substance of which is thus stated:—"A great prevalence of venereal disease in this Presidency and relatively an increase of disease during 1868, as compared with 1867," and some particulars of the actual working of the Lock Hospitals are given. The number of women admitted stands in no proportion to that of registered prostitutes, nor to that of infected soldiers, and the Commissioner concludes—"it may certainly be affirmed that their cost has far exceeded any benefit which can have been derived from them."

Speaking in general terms, it is not too much to say that the Act has not yet been put into force in cantonments. No conclusions can be drawn of its capabilities from the mere pretence of administration which is all that can be discovered in a large number of stations. Registration is nominal. Hospital treatment does not deserve even the name; and until the broad provisions of the Act are put into some semblance of execution, it seems idle to issue new orders on accessory details, such as the classification of women, the multiplication of [illegible]

In the 11th & 12th paragraphs it is recommended that all unmarried soldiers should be examined on their arrival in cantonments, to ascertain if they are affected with venereal, and that all soldiers admitted into hospital with venereal should be subjected to weekly examination for six months after discharge. In an [illegible] appear plausible. In the large standing camp of Aldershott, [illegible]

place of syphilis, and fair success has followed, it is reasonable that officers should look with some jealousy on the arrival of regiments from less guarded stations, as likely to re-infect the camp; and the same may be said of naval stations receiving ships from abroad, but there is not even a show of reason for thus treating men who arrive at a new station in India. Until the stations themselves are in some degree purified, the Commissioner surely does not affect to think they can be made worse than they are by men who have come off a journey. When the Act shall have been fairly put in force, it will be time to consider whether importation of disease impairs its success, but it is illogical in the highest degree to propose, as a working detail of a neglected law, a return to a practice which, full of objection and complete in uselessness, had perished before the law was made. It is simply an admission that the Act is essentially worthless.

Similarly, we are unable to see what good can be expected from weekly examination after discharge from hospital. It cannot be required for the detection of the common forms of secondary disease, but it may perhaps be argued that without the recurrence of specific infection, the seat of a sore is liable to a form of secondary affection which is itself contagious; these cases, however, are exceptional, and against them may fairly be set off the diminished liability of a syphilised man to contract new infection, so that, on the whole, it would be difficult to prove any special necessity for inspecting men so circumstanced. We observe, however, on referring back, that the object of the practice is the protection of the women. Now, in another portion of his paper, the Commissioner tells us that there is no particular class of women who confine themselves to the soldier, but that those whom he visits cohabit freely with civil inhabitants. Of their visitors, therefore, the soldiers are doubtless but a small numerical proportion, and the protection which this harassing inspection can afford is imaginary.

An opinion has lately been put forward in some quarters, that there is injustice in subjecting public prostitutes to examination, while the other sex are less at liberty. Space does not now admit of our discussing the subject, but the arguments on the other side are so over-powering, that we think there can be little fear of the opinion gaining many advocates. A very short experience in a town is needed to shew that the prostitute is the real infecting centre in every practical sense. The number of men who, in ordinary circumstances, may contract disease in a single night from one of these, is alone sufficient, in the cause of public health, to remove all parallel between the woman's and the man's position, and to shew the purely ideal nature of the alleged equality between them. It is contended that the woman must be infected by the man before she can spread infection. True: and the cesspool only furnishes a nidus of development to the typhoid germ which it receives from without; shall we, therefore, leave the cesspool untouched in its malignity until we are prepared to arrest the germ on its way there.

CHOLERA.

We need hardly remind our readers, that cholera raged with great fury from June to September 1867, in the valley of Cashmere, and about the same time it was imported into Cabul from British India. In the city and neighbourhood of Jellalabad, the disease was most virulent, but on the approach of the cold season cholera died away, to be reproduced in the following year (1868), when it advanced westward by rapid strides as far as the north of Persia, raging with considerable violence at Teheran, from the 24th of August to the 11th of October; it spread to the surrounding villages, but does not appear to have taken any very great hold on their inhabitants.

Early in 1869 cholera again appeared at Herat, and making sad havoc in that city, it extended to Furrah and the intermediate country; and we now hear by telegram from London, dated August, the 19th, that "cholera is travelling south from Teheran, and is raging at Shiraz and Ispahan."

As far back as June the disease was said to have made its appearance in Bagdad, but we have seen no later notice confirming this intelligence. It is well to observe, however, that the course pursued by the cholera above indicated, was precisely that which it followed from the Punjab into Cabul, and, via Herat, to the north of Persia, in 1829, 1845, and 1853; during these years the disease was imported, as it has been in 1867, into Afghanistan, and was followed by an outburst of cholera at Teheran and throughout the north of Persia, from thence extending over the Caucasus, or more commonly along the shores of the Caspian, from Rahed to Astrachan, and so into Europe and America, in 1831-32, 1848, and 1854. Whilst the Punjab cholera of 1867 has been steadily advancing westward, we have witnessed a fresh, and most virulent outburst of the disease, extending well nigh over the whole of British India.

The Central Provinces are the route which the cholera of Bengal follows when advancing directly from east to west across India, in contradistinction to its north-west passage through the Punjab, and so to Cabul, as above indicated. In 1867, it is remarkable that the Central Provinces were almost absolutely free from cholera; but in January, 1868, a gang of coolies from Mirzapore imported the disease into the Gunnesh Gungee Valley, from whence it spread southward to Nagpore, eastward to Mundlah and westward into the Nursingpore district. Dr. C. S. Townsend reports "that on the 3rd of June a heavy fall of rain occurred, which was very general over the districts of Jubbulpore and Seonee; from this time the number of villages attacked increased daily, but it was not till the middle of July that the disease reached its greatest amount of diffusion. In the beginning of August it again subsided, and by the 20th of that month had almost ceased." Nevertheless, in September, cholera was still present in the Nagpore and Jubbulpore districts; and in the following month was more severe than usual in parts of the Island of Bombay.

In April, 1869, cholera again broke out at Nagpore, and was generally prevalent throughout the Central Provinces; we hear of it at the same time far away to the west of India, on the road between Khandeish and Mhow, at Nagode, and Indore. On the other hand, our most eastern possessions were likewise under the influence of this terrible disease, for it was fearfully virulent at Akyab during the early months of the year, and it is present now in various parts of Burmah.

It is beyond our province to follow the extension of cholera over India since the commencement of 1869, but we may safely affirm that it has been prevalent throughout the Bengal Presidency, spreading over the North-West, Central Provinces, and far away into the Punjab to Umritsir (where it has been very deadly), branching off also to Subhatoo, and extending along the Thibet road beyond Simla. Cholera broke out in the city of Peshawur on the 7th of September, the mortality greatly

[illegible] Egypt to the circumstances of the disease in this country. [illegible] considerable portion of British India during the past five months, radiating from the Gangetic valley to the furthest limits [illegible]

Nor can we close our eyes to the fact that, should the disease fail to progress westward through Russia, or Turkey, a new and most dangerous passage will after the close of this year be open to cholera through the Suez Canal. It is almost superfluous to remark that it will require all the vigilance and skill [illegible] repeated importation of cholera through this channel; we fail to hope for much from India, but the Government of Turkey is evidently alive to the dangers of the case, and it will demand all their energy to prevent the Suez Canal from becoming a great curse to Europe, which it certainly will be, if cholera infecting crews, merchandize, and vessels, pass over its water, to [illegible] sea-port towns of Europe.

DR. CORBISH ON OPIUM AND IPECACUANHA IN DYSENTERY.

(Continued from page 197.)

MADRAS MEDICAL RECORDS.

From [illegible] A. Bowie, to Dr. James [illegible] Medical Department, dated Bangalore, 18th [illegible]

[illegible] from Vellore, [illegible] Mr. McMullen, [illegible] with Mr. Abercrombie's [illegible] which I consider the greatest improvement lately made in the [illegible]

The detail in Mr. McMullens' journal I deem of the utmost value, and have, therefore, extracted from it some cases, which [illegible] Mr. McMullen [illegible] cases [illegible] of dysentery.

This idea is, I believe, yet too prevalent, as it leads to evacuations and mercury for a cure which have been found by no means [illegible] Mr. Abercrombie's practice, but as pointing out the injury from purga-

"[illegible] reasoning and experiments of Akenside, Stoll, and Vogler, I [illegible] satisfied from my own extensive experience, that the dysentery does not at all depend upon bilious corrupted acrimonies in [illegible] less by purgatives; but that it is a rheumatic or catarrhous affection of the intestines, particularly of the great guts, and that [illegible] diaphoretics."

This is exactly Mr. Abercrombie's mode of cure, for no remedies can be more sedative and diaphoretic than his large doses of laudanum, followed by a considerable quantity of ipecacuanha, which he gives till favorable symptoms appear, and in all fatal cases, the great guts on dissection have been found [illegible]

The inflammatory nature of this disease cannot be too particularly stated, nor the injury from purgatives too strongly pointed out. Dr. Francis Duncan, when Surgeon of H. M's 36th Regiment, first made known the disease in a letter addressed to your Board early in 1795, and the first rational improvement in the [illegible] that time commenced. Its violence, as described by Dr. Duncan, shows the absolute necessity of an active practice like Mr. Abercrombie's. Dr. Duncan states it as follows:—

"Sickness in all the other forms I have met it in India has nothing so deplorable as this disorder. I have seen no other attended with so much anguish; and so hard a struggle with so dreadful a commotion of the bowels, and accompanying symptoms so truly melancholy. While the patient labours under severe fixed pain, burning from perpetual watchfulness, and unquenchable thirst, the contents of the bowels are violently ejected without intermission, and almost in one continual stream: it is impossible to preserve him clean, his bed-clothes are overspread with blood, and he literally welters in the discharge of his own bowels.

"This disease is chiefly fatal to young men of fresh and blooming health, and seldom affects the aged, the infirm, and [illegible] on their first arrival, especially if they are sent to the field, and they are chiefly subject to that dejection of mind and apprehension of death, which attends the disorder from its first access.

"In its course and symptoms this disease is less liable to variation than any other I know. In the field I have known it terminate on the 6th day after its access, but in general this happens between the 10th and 14th, and never in a single in- [illegible] the patient was advanced in life, and the inflammatory symptoms less severe. From January to April 1792, this disorder raged with the violence of an epidemic pleurisy, and I was very much struck with its falling particularly on young men of similar habits and appearance, possessed of blooming though delicate complexions, and such as you would have supposed in cold climates to be subject to phthisis pulmonalis."

The following is Dr. Francis Duncan's account of the cause [illegible]

"That the colon is the seat of the flux that recruits suffer most from, and the remote causes are obstinate costiveness with the application of cold. Recruits having always told him the complaint was preceded by costiveness and sleeping in the open air at night, exposed to the dew, and his conclusions on the best mode of cure were as follows:—

"That he thought he had ascertained the two following [illegible] most [illegible] drastic purgatives, may be followed by a fixed pain at the bottom of the belly—tenesmus, suppression of urine, bloody stools, and every other symptoms of inflammation and ulceration of the colon; and 2nd, that in the dreadful flux which proceeds from inflammation of the colon, where the symptomatic fever has not been very violent, nor the fixed pain at the bottom of the belly very acute, and where all the symptoms have been in a milder degree, that by the constant use of fomentations and [illegible] with an opiate at bed-time, but *without one single*

base of physic, that in this way the disorder has gradually changed from an acute to a chronic nature, and the patient recovered, but that a single dose of jalap and calomel would counteract it, and render this plan of no avail."

Mr. Abercrombie, on this subject, speaks as follows in his letter to me, dated 21st May, 1806:—

"I have just been perusing the extracts you sent me some years ago from Dr. Francis Duncan's letter on inflammation of the colon, and with the exception of the ardent burning fever which he describes so particularly as an attendant on his disease, I do not know that it can be said to differ materially from the disease we have had at Gooty. I cannot say, indeed, that we have been able, even generally, to trace the disease to have been, as the Doctor says his was, preceded by costiveness or immediately induced by cold; in all other symptoms however, and especially in its fatal termination, this disease and that described by Dr. Duncan resemble each other but too much. I have not got the Doctor's printed letter by me, so that I cannot draw a sufficiently close comparison of the diseases. Does not Dr. Duncan say that his disease chiefly, or only, affects recruits or young men during the first 18 months of their residence in India? We have lost upwards of 20 men, all of whom have been upwards of three years in the country, and none of whom survived the 11th day of the disease, some not the 7th. Notwithstanding the very general prevalence of this terrible disease at Gooty, I have not been able to trace anything like a remote cause of it, nor, indeed, the immediate cause, excepting in a few cases where the unfortunate sufferer evidently drank himself to death; this last, however, I am satisfied, cannot be admitted to any extent as an exciting cause. I am induced to suspect that affections of the bowels, and this disease in particular, must be endemic or peculiar to Gooty, for not a single case, such as I have been describing, has occurred among our companies at Bellary, nor has there been by any means our usual number even of the common affections of the bowels at that station. On enquiry I find the 83rd Regiment, and particularly the 73rd Regiment, when quartered here, suffered very much from this disease. I have remarked that of four women (Europeans) confined in child-birth within the last three months at Gooty, two have died of puerperal fever."

* * * * * *

Having thus shown the probable causes and the nature of the disease which are necessary to form a just estimate of the utility of the practice followed, I will shortly state that from early in 1795, the date of Dr. Duncan's letter, to May last, the practice most approved by those best enabled to judge (for mercury was, and is still, a favorite with some) was by nauseating doses of ipecacuanha and opium, blisters, warm bath, fomentations to the abdomen, warm covering, emollient injections, or ipecacuanha or opium, or sometimes acetate of lead, with a strict attention to a mild diet, bleeding when the pulse warranted, or inflammatory symptoms run high, and every means to moderate inflammation, sooth, or arrest the abrasion of the mucus, their natural defence, that the inflammation might terminate in resolution or suppuration; for if this cannot be effected, it rapidly runs into mortification and death, as numerous dissections have shown.

Mr. Abercrombie had much experience, when at Arcot, in this disease both in recruits and the men of the regiment, and had the highest opinion of its utility, and was considered a successful practitioner by it, as many of my letters to your Board will show. It was not, therefore, without the strongest conviction of the necessity of some more active practice being necessary to combat the severity of the disease at Gooty than he had yet followed, that he *adopted his assistant, Mr. Graham's suggestion of a practice pursued by a friend of his in Africa*, and has followed it up with success and confidence. It is this for which he deserves the greatest credit, in adopting and proving on himself the safety of so bold a practice, and in recommending its utility, for the indications of cure are not altered, nor the medicines, it is the *quantities of the remedies now that are unknown*, and which require proof of safety and efficacy to be more generally given.

* * * * *

I have made this a separate report from the interest and value that must be attached to this seemingly most successful treatment of so severe a flux, which I hope you will approve, and think the knowledge of it worthy of being communicated for general information and trial; that if found effectual, one uniform practice may be adopted, which is always an object of much consequence in the treatment of the [illegible].

Extract of a letter from Mr. Abercrombie, Surgeon of H. M.'s 34th Regiment, to Dr. Andrew Berry, Superintending Surgeon. Dated Gooty, 21st May, 1806.

* * * * * *

"Graham now informed me that a friend of his, who had been much employed in the Guinea trade on the coast of Africa, was in the constant practice of exhibiting in the dysentery of that country, *large doses of ipecacuan with a sufficient quantity of laudanum, to prevent the ipecacuan operating as an emetic*. I began and have invariably pursued this practice for a month past, and from the result, I have no hesitation in saying that I think the fairest possible trial should be given to it, and that I am confident it is in many cases productive of the best possible effects. The following are the particulars of my practice and experience of this remedy. On the patient's reporting himself, he immediately takes tinct. opii. 53 or 54, and in about 15 minuts afterwards pulv. ipecac. 9ii or gr. xxv; in the evening the dose is repeated, but only of about half the quantities taken in the morning. In these proportions, and with very little variation, the remedy is continued as long as the symptoms indicate, and I have given it daily as above for 6, 7, and 8 days."

* * * * * *

"A very few days after I last wrote you on the subject of colonitis, I had myself very sudden and nearly as severe an attack as I ever have met with, and although by our new practice I got presently rid of the violent symptoms, I have not even now got the better of the complaint and its consequences."

* * * * * *

"I shall be very happy to hear what you think of the practice, and if you have yet had any opportunities of seeing it tried. At first sight the general febrile symptoms noticed above seem such as would have forbidden the exhibition of a large dose of opium, however combined. I maintain, however, from repeated experience, that the practice is perfectly safe; in my case the third dose of the medicine produced every effect required; it seldom happens that less than double the number of doses proves sufficient, and I very commonly continue the medicine, morning and evening as in my own case, for 7, 8, or 10 days. The *modus operandi* of this medicine is evidently by its powerful determination to the skin, to which I conceive may be added, what you hinted to me, a certain antiperistaltic action of the ipecacuanha—the former effect appears clear, as well from the sensible perspiration as from *an eruption* on the skin, which very commonly appears and resembles a good deal the prickly heat;* in many cases this eruption about the mouth, face and neck runs on to a kind of suppuration, and scabs are formed: in my case the lower part of my face resembled much that of a person recovering from confluent small-pox. From an account I lately read of some experiments made with opium on healthy subjects, I have no doubt that this last is an effect entirely of the remedy, and not, as I once suspected, of the disease; besides this symptom never appears except in cases treated as above. That this medicine has some antiperistaltic action or power may, I think, be argued from the nausea which it so very generally produces, and indeed from the large quantity of ipecacuanha taken. I would here make the practical observation, that if the medicines are retained for one hour, the desired effect is nearly as well answered as if the medicine was not at all to produce sickness and vomiting."

* * * * * *

From Mr. McMullens, Surgeon, H. M.'s 39th Regiment, to A. Berry, Esq., Superintending Surgeon. Camp at Ceiar, dated 17th February, 1807.

Dear Sir,—When I had the pleasure of seeing you at Vellore, I had some conversation with you upon the utility of opium and ipecacuanha in that species of dysentery most generally met with, and hitherto *too* generally fatal in India, *viz.*, colonitis.

* * * * * *

"Every case of any importance will be found in my monthly journals; suffice it, therefore, to say that of the casualties which have occurred, at least [illegible] cases of flux. The months of July and August were the most fatal, almost the only disease then existing was flux, and the casualties amounted to about 4th of the cases; the treatment consisted of mercury both internally and by friction, [illegible]

[illegible]

[illegible]—W. R. C.

[illegible] was had to the [illegible] and [illegible] which soon [illegible] [illegible] the pain of his side subsided, and he speedily recovered."

Official Selections.

EXTRACT FROM AN INSPECTION REPORT ON HOOGHLY BY DEPUTY INSPECTOR GENERAL OF HOSPITALS G. SAUNDERS—DATED 12TH AUGUST, 1869.

"ONE thing I could not fail to notice in my examinations of the native portion of the town. At the huts of the poorer class of the inhabitants are built of wattle and dab walls, or of clay, and these dwellings are raised on a level with the ground or lower. During the rainy season, and it was [illegible] [illegible] who entered these houses, to sit on the floor of their huts at night, with simply a mat between them and a soil saturated with moisture. Can it be wondered at, that these poor and ignorant people suffer from disease in all its various forms and varieties? Is it not rather wonderful, that the race [illegible] exist [illegible] under such insanitary influences are added those resulting from insufficient food? I do not mean to say that many of these poor people have [illegible] but I think it safely be [illegible] of hunger; but question, what [illegible] [illegible] will find that the majority of the classes, who suffer the most severely from the effects of climate in Bengal, are those whose daily dietary is wanting in the due proportion of alimentary elements—[illegible] with a particle of vegetable oil). But compare these with the food of the labouring classes in any country where health is maintained, and the [illegible] [illegible] [illegible] [illegible] [illegible] naturally pride themselves on the success which follows on our system of government, and on the advantages which result from opening out the communications of a province, and the lines of commerce, whether by road or rail; our exports increase day by day, and year by year large quantities of the products of the land are sent across the sea; but it is overlooked, that after some time, the prices of all articles of food, and labour, increase, living becomes year by year, more difficult and expensive to the lower classes, and (though a certain class benefits, and the producer gets a higher price for the products of the soil), the labouring class in every agricultural district is worse off than it ever was. In no article of export has the trade increased [illegible] of late years, as it has of mustard seed. The poorer classes of the agricultural population used, years ago, to grow [illegible] [illegible] [illegible] [illegible] [illegible]

Eight or ten fresh admissions were standing at the gateway as I left the jail, and all of these had well developed scurvy.

Before I close these remarks, I will allude briefly to the epidemic disease which has for some years past prevailed in this zillah, and place on record my views regarding its nature and origin. In the first place, I think there can be no doubt that the fever, which has caused such dreadful mortality in Hooghly during the last few years, has nothing specific in its nature, and is neither more or less than the ordinary miasmatic fever which prevails everywhere in Bengal, at certain seasons of the year; but in the Hooghly District in an aggravated form, depending on certain conditions of soil and climate, which have been superadded to those which always existed in this zillah, as in all the other provinces of Lower Bengal. I do not believe we have ever had reliable information of the mortality which has prevailed in Bengal year by year, during the months most favorable for the production of fever. During the rainy season large portions of every zillah are submerged, an immense cultivation is carried on in the inundated districts (rice), which, consuming as it does the decaying animal and vegetable matters existing in the soil, aids with the inundation in keeping down noxious exhalations. During these months, moreover, the meteorologic changes which are everywhere observable, are less marked than they are at other seasons of the year; it is true the rain-fall is considerable, but the extremes of temperature are not excessive, the daily range of the thermometer being about five to eight degrees. We consequently find that disease is not so prevalent in the province, as it is later in the season; but when there is a considerable daily range of the thermometer, great variation in the humidity of the atmosphere, and great evaporation going on from the soil, with a certain amount of actual cold, then we have in full operation all those common but active influences which produce disease, and the rural population suffers at once from insufficient clothing and diet, as also from the climatic peculiarities which I have just indicated. Fevers are then rife, accompanied in nearly all cases by visceral congestions, principally of the spleen and liver, but occasionally of the lungs, and frequently of the articular structures. These fevers continue to prevail in November, December, January, February, and March, when the hot season sets in, and for three months the poor, destitute Bengalee experiences as much of health as his low state of vitality will permit; but on the occurrence of any sudden or unexpected climatic change, or on being subjected to special influences, he at once succumbs, and the TYPE of the disease (whatever it may be) is influenced by his low state of vitality, and the unhealthy state of the tissues. It is not uncommon to find many of these cases developing into typhoid fever, or exhibiting typhoid symptoms, the state of the system being such that any prolonged attack of disease will be associated with, and accompanied by, an adynamic state; but I am convinced that the fevers of Bengal which have caused, and are producing such mortality, and exemplarily so in the Hooghly District, are simple fevers of the intermittent, remittent or continued types, originating in common causes, but influenced by the low hygienic state in which the greater part of the population are maintained. We all know the insanitary influences which are to be found in a Bengalee village, and the absence of all conservancy arrangements, but these are not peculiar to the Hooghly villages, and they are (though destructive enough in themselves), not the causes of the Hooghly epidemic. What then, are the causes which, in addition to those enumerated here, have caused a once flourishing district to be half populated, and which threaten to throw half the land out of cultivation? The portion of the Hooghly District which has suffered most from the ravages of this fever, is that comprised between the Damoodah and the Hooghly; intersecting this tract of land from west to east, run many khalls or rivulets: these were intimately connected with the drainage of the country, and they were the means whereby the floods of the Damoodah, when they rose, found means of egress into the Hooghly. The khalls were in fact an important part of the natural drainage of the country, they were not only safety valves to the Damoodah, but they exercised a fertilising and sanitary influence on the whole surface of the district. But it was found (as many and often happens) that this process was not wholly a beneficial one; it had the inconvenience of inundating a large tract of country in seasons of great flood, and then the crops suffered, and the revenue also. A remedy was proposed and carried out, a bund was constructed on the left or Eastern bank of the Damoodah, cutting off the head waters of the khalls; and these latter, as a consequence, commenced silting up.

As long as the Damoodah floods traversed this net-work of small rivers their beds kept free, and thus afforded a certain and efficient drainage for the district after the floods had subsided. A district will suffer less from an occasional flood, than from a continuous saturation of the soil, and so it has been found in the Hooghly District,—when then, in course of time, these water-courses more or less filled up, the natural drainage of the country, which we had interfered with, was in abeyance, and we had substituted nothing in its place. There is another point of some importance: the first effect of the spring rains in this district used to be to wash all the surface filth of the district into the khalls, and the first flood from the Damoodah swept this into the Hooghly, and out to sea. Now, on the contrary, the first rain-fall washes the surface impurities of the previous months into the khalls, with an admixture of alluvial matter, and then we find the silting up is a process which combines the admixture of various degrees of impurities with the soil, and the ultimate drying up of these under the rays of a tropical sun.

This latter, however, is an influence which will only injuriously affect those who live on and near the khalls, but the super-saturation of the soil, which results from the closing up of the natural drainage channels of the district, is by far the most important question, and demands an immediate remedy. One cannot however but consider that the process whereby the filth of a Bengalee district was annually scoured out, and removed from amongst the inhabitants, was a very remarkable instance of natural sanitation. The remedy is, I suppose, a point for an engineer to settle, but there can be no doubt, that whatever is done, a thorough and complete drainage of the district must be carried out; and I conceive this can only be done at a great expense, in which the zemindars and the Government might act in concert. In course of time new channels would be formed, and 20 or 30 years hence the district would again drain itself, but that, of course, cannot be permitted; and the only plan open to the Government is, I am of opinion, either to deepen the old water-ways, or to construct new ones, or flood-gates might be constructed at the head waters of the canals coming from the Damoodah, whereby a sufficient flood could be permitted to scour out and deepen the khalls, and yet insufficient in quantity to cause any submerging of the district. Though costing very much more, I think I should prefer the establishment of a new drainage system altogether, which might be arranged in connection with the irrigation canal project.

The question then arises, Will these measures, or any of them, repress the yearly outbreaks of fever? They will not; but they may be the means of improving the state of the province, so that the mortality will, in time, be not in excess of that which existed years ago.

It will still be necessary to house the rural population on some better plan than that in vogue everywhere in Bengal, (which can be done at small expense), and to ensure that the people generally shall be so instructed on the subject of food, that they may always, when earning a fair day's wage, know how to utilise it, so as to maintain life on fairly good hygienic rules.

Of course do all we can, there will be always a large section of the Native community who must suffer and die, and it is scarcely possible to drain a country, and improve the nature of its soil where the principal staple and the ordinary article of food is, and always must be, grown in a swamp. The facts relating to the drainage of the district I have learnt from Mr. Cockerell and the other civil residents, but it has been my duty to trace the relationship between these and the exceptional sickness of the zillah and the excessive mortality.

EXTRACT FROM A REPORT ON THE SANITARY STATE OF THE CITY OF UMRITSIR, BY ASSISTANT-SURGEON A. TAYLOR, CIVIL SURGEON.—DATED 28TH JULY, 1869.

DURING the prevalence of cholera I have gone into all the narrow, out-of-the-way streets and lanes, and I have thus had an opportunity of ascertaining their sanitary condition, which I have no hesitation in stating is so defective, that the present outbreak of disease may be fairly ascribed to it, and which, unless rectified, may be dreaded as a constant source of epidemic sickness in future, or which may even convert disease now epidemic and occasional into disease endemic and persistent.

The chief points to which I want to bring attention are:—

1st.—*The two old underground sewers* running one from Bazar Darbar Sahib through Ramgurhia ke Kutra to Gobindgarh Gate, and the other from the Lahoree to Bhagtanwala Gate. Cholera has been more severe in the vicinity of these sewers than in any other part of the city. I apprehend

[illegible] the [illegible] sewage leaks [illegible] [illegible] [illegible]

Pro., 4th November.—Extract from the 11th Article of the Regulations for the administration of justice in fouzdary or criminal courts in Bengal, Behar, and Orissa. "He (the magistrate) shall pay particular attention to the health and cleanliness of the prisoners, and request the surgeon of the station to attend and administer to the sick."

Pro., 19th Oct.—The allowance paid to a surgeon of a ship from England to Bengal, was 10s. 6d. for every recruit landed there.

1792.

Pro., 14th Jan.—The civil medical officer would either, in the following case, seem to have sent in no report, or the routine may have been the custom of the service.

The collector of Purneah reports (21st November, 1791), to the Board of Revenue, that all the people in his district and unadjoining have been suffering for two months past. They send the report on to the Secretary to Government (14th December), who refer it to the Hospital Board (28th December), who send it to the Surgeon of Purneah, requesting a circumstantial report of the epidemic destemper, with a general description as to situation (of town), climate, soil, and manners and customs of the inhabitants, and specifying 5 heads under which his report on the disease is to be recorded. The surgeon replies in a report, dated 5th January, in a letter which occupies 12 pages of the records. The epidemic began as remittent fever, cholera morbus, and dysentery in September. After about a month of prevailing sickness "it was judged advisable to remove all the sick officers and Government servants to Caragola on the banks of the Ganges, 18 coss (from Purneah), where they all recovered to a man."

"The malignity of the epidemic began to disappear about the middle of December, and towards the latter end assumed the form of quotidian or tertian type intermittent, which are endemical to the inhabitants of Purneah and parts adjacent in the months of November, and December to February." He then gives a topographical and sanitary description of the City of Purneah, which, entering on all the points of filth, bad drainage, jungle and stagnant water, putrid fish, &c., may probably be met with in the same state at the present time! He states also the unsual state of the climate, early cessation of rains and more rain than usual, which caused putrid smells to be blown over the town whenever the east wind, &c., blew. The Board, in sending the report on to Government, on 7th February, state—"indeed it appears to us that as the disease took its rise from the very uncommon state of the weather which prevailed during the months of July, August, and September, and the influence thereof on the peculiar local situation of Purneah, no human means could have prevented it,"—practicals anitary measures were evidently then not thought of.

Pro., 13th Sept.—A Mr. Gladwin writes to the Board to request them to forward to Government, for its patronage, a "specimen of my translation of the Alfazul Aduiah," believing that the publication thereof would be useful to gentlemen of the faculty in India.

The Board recommend it to Government. It appears Nowred-din Mahomed Abdullah was the author, and they suggest that it would prove useful in directing surgeons in their enquiries respecting the medicines used by the natives

Pro., 2nd Oct.—An assistant-surgeon commences a petition thus to the Governor-General:—"My Lord,—On your safe return from terminating a war which was undertaken and carried on entirely in the support of justice, give me leave for a moment to beg your attention to my claim for rank," &c.

Pro., 23rd Oct.—Government address a letter to the Board, taking upon themselves the maintenance in the General Hospital of "Europeans of the lower class destitute of friends or connections in this country, who are found in the streets of the town, under diseases which often become fatal merely from want of proper care and medical assistance." It would appear that previously any person finding, and sending such to the hospital was charged with his keep while under treatment.

Pro., 1st Dec.—The Board report to Government that they, on the report of the head surgeon of the General Hospital, have made an inspection, and submit the following alterations and improvements:—"We advise that the present necessaries which are constructed in the centre of the north side of each of the buildings, with the principal doors and stair-cases passing between them, be converted into *warm and cold* baths, and quarters for the orderly serjeants," &c.; new necessaries to be built to E. and W. of each of the wings, approached by a covered communication. They dwell on the offence of the old necessaries. They recommend pipes "leaden or pottery," to carry away the water used for washing the floors into the common sewers that the old dwelling house be converted, when repaired, into a *Convalescent* Hospital. Dispensary and Cooking Rooms should be built, a Conjee house also, and quarters for at least 8 assistant-surgeons. The N. W. corner of the compound is stated as most eligible, as, "though it is within 100 yards of the Hospital, it is not exposed to the impure air that blows from it." That the tank close to the Hospital should be filled in, and the whole court levelled, and a smooth gravel, soorkhy, walk be made all round for the use of the convalescents. They recommend also the large jungle to south of Hospital to be cut down and the ground properly drained, and all the numerous small tanks filled up. "Nothing could contribute so much as this to render the situation less unhealthy, as the wind blowing over such an extent of stagnating water directly on the Hospital must be very noxious. We cannot account for such a situation having been chosen at first, except that the ground near Calcutta was then all in the same state."

Lastly, "we suggest the propriety of the Engineer being consulted respecting the practicability of deepening the ditch which surrounds the Hospital and communicates with the Nullah, in such a manner as to allow the water to flow freely into it, and be from thence conveyed to the necessaries for the purpose of keeping them constantly clean. One reason for thinking that this most desirable end might be attained, either simply by deepening the ditch, or at least by the assistance of a *chain pump*, is, that even at present the water rises a considerable way up into the ditch at spring tides."

The Government, a few days afterwards, afford sanction for part of the above, and directs estimates to be made about the remainder.

The whole letter shows great thoughtfulness about local sanitation, and the idea of pumps has evidently been prevalent from that day to this.

(Why has Government ever set its face against pumps?)

Extracts.

At the recent Meeting of the British Medical Association at Leeds, Mr. Edward Lund read a paper "*On the use of antiseptic cere cloth for covering wounds.*" He described this material, which he had lately used with great advantage, as a cheap and ready substitute for Professor Lister's lac-plaster. It is made of calico saturated with a composition of solid paraffin and carbolic acid, with the addition of a little oil and wax. It is prepared of three colours: red, yellow, and white, to distinguish the proportion of acid which each contains, viz., one-fourth, one-sixth, and one-eighth, respectively. It is to be used in every way as the lac-plaster, and with the same precautions. Mr. Lund showed a specimen of ment which had been wrapped in this cere-cloth, and was perfectly sweet and fresh at the end of six weeks, whereas a piece of meat covered over in the same way with waxed cloth, without carbolic acid, was perfectly putrid in less than nine days. It was suggested that the cere-cloth might prove useful for keeping pathological specimens for microscopical examination.—*The Lancet.*

Dr. B. W. Richardson read a "*Note on a new method of painless cutting in surgery.*" The author placed before the section a knife consisting of a revolving blade, and which divided with such rapidity, that superficial incisions could be made with it without pain. The revolutions were about twenty-five per second, but the speed might be greatly increased. The knife in its action illustrated that an appreciable interval of time is necessary for fixing an impression on the mind, and for the development of consciousness. He hoped he should soon be able to give to the surgeon a small pocket instrument, with which to open abscesses, and perform many minor surgical operations painlessly, without having recourse to either general or local anæsthesia.—*Ibid.*

One of the last novelties produced in the Berlin medical world is a new sedative but which [illegible] Dr. [illegible] says also [illegible] an anæsthetic. It is [illegible] CH^2O, the peculiar nature of which is, that when treated by an [illegible] it produces [illegible] He [illegible] himself of the alkalinity of the blood, and so, when administered [illegible] through the lungs, the [illegible] of chloroform. The experiments on rabbits were perfectly satis[illegible]

[illegible] that the rabbits, on [illegible] of the most severe which usually attend [illegible] and finally. On account of the uncertainty as to the [illegible] the experiments on the human subject have not [illegible] as yet to be satisfactory.—*Ibid.*

IN PERIODIC SPITES, Professor Alcott of New York applies equal parts of tincture of iodine and aconite root. Two or three drops of the mixture should be applied to the gums by a camel-hair brush, and "the fluids of the mouth should be kept from it [illegible] Alcohol is sedulously excluded to prevent its being [illegible] from the part to which it is applied. This requires [illegible] minutes."—*Medical Times and Gazette.*

CREOSOTE IN THE TREATMENT OF TYPHOID FEVER.—M. G. [illegible], of Montpellier, has newly made an extensive trial of [illegible] in cases of typhoid fever. He attributes the disease to a ferment in the blood, and that the *origo mali* consists of the [illegible] produced in the animal economy by the depraved blood, and the reaction of the animal economy against this [illegible].

"From the recognised influence of creosote in destroying organic ferments, he determined on a fair trial of its power in [illegible] what he terms *typhous ferments*. The *Bulletin de Thérapeutique* records that, experimenting on sixty cases of typhoid at St. Lô Hospital, he gave daily three drops of creosote by the mouth, and an enema of three to five drops, his object being to keep the blood under the creosote influence. No inconvenience was caused by the administration, and the result was that in the cases where the disease was in an advanced condition, as anticipated, little or no effect was produced; but in those where the patients were got into hospital in the earlier stage, the effect was to diminish very considerably the duration and also the intensity of the disease; and he concludes that, without doubt, the early administration of creosote has the most powerful influence on the course of the fever."

It is also suggested that, during fever epidemics, creosote should be used as a prophylactic in hospitals or large institutions. Though we may doubt the power of this remedy, and in such doses in our Irish typhoid, we think the subject worth [illegible] and fair trial.—*The Medical Press and Circular.*

THE ACADEMY OF SCIENCES OF PARIS held its annual public sitting on Monday week last, at the Palace of the Institute.

M. Villemin obtained a prize of 2,500*f.* and M.M. Feltz, Ritti, and Rhenevski were awarded honourable mention and 1,500*f.* for their contribution to medicine and surgery.

The Academy recompensed the remarkable researches of M. Villemin, on the inoculation of tubercle, and on phthisis. The author had already announced this important fact last year, but the Commissioners had desired that further experiments should be made to ensure that its accuracy should be incontestable.

[illegible] sub-cutaneous opening be made in the ear of a rabbit, and introduce a morsel as large as a pin's head of tuberculous matter taken from man or cow, a local deposit of tubercle is at once developed in the animal. The sympathetic ganglia communicating with the wound are impregnated with nodules of tubercle. The results of this method of examination have been examined by M.M. Andral, Bouchut, Cloquet, Lasègue, Nélaton, and Lasègue.

From the facts of the memoir on the virulence of tuberculosis may be concluded. Then, if it be inoculable and virulent, it is necessarily contagious. Being inoculable from men to animals, it will be so without doubt, from man to man. It will be for the future to decide in what special conditions cohabitation may [illegible] the disease transmissible.—*Ibid.*

IODIDE OF POTASSIUM FOR BRONCHOCELE.—Professor James R. Wood, of New York, extols the following formula as an ointment in bronchocele and other glandular tumours:—

R. Ung. stramonii	..	℥ij
Ext. Conii	..	ʒij
Iodid. potassii	..	ʒij
Iodini	..	gr. x

M. Ft. unguentum.—*Ibid.*

NEW RESEARCHES IN CEREBROSCOPY.—M. Bouchut, we learn from the *Union Médicale*, has just presented to the Academy of Sciences of Paris, through M. Dumas, his researches on cerebroscopy, which he has offered for competition for the Montyon Prize in Medicine and Surgery. He enumerates his conclusions as follows:—

"In diseases of the spinal cord, such as acute myelitis, spinal sclerosis, locomotor ataxy, &c., produce usually a congestive [illegible] and consequently atrophy of the optic papilla."

"In lesions of the optic nerve produced by spinal disease are the result of a reflex ascending congestive action, and they take place by the intercommunication of the great sympathetic."

"The presence of an hyperæmia of the optic nerve, of a vascular diffusion over the papilla, and of a partial or total atrophy of this papilla according with feebleness or numbness of the legs, indicates the existence of acute or chronic disease of the spinal cord."—*Ibid.*

WHEN TO TREPHINE.—M. Chassaignac, *L'Union Médicale*, advocates *trephining* in only two conditions. 1st, when there is a lesion situated in a definite spot, the seat of which lesion is fully ascertained, and the effects of which may be suppressed by trephining; 2nd, when there are dilated pupils, with symptoms of general compression, which symptoms are tending infallibly to produce death.—*Ibid.*

THE SUBCUTANEOUS TREATMENT OF CONGESTION ABSCESSES.—Dr. Wertheim reports thirty-two cases of virulent bubo, congestion abscess, hydrocele, and ganglion at the wrist, in order to prove the advantages attending a plan of treatment which consists in the removal of the accumulated fluid through a small trocar, and subsequent injection of some medicated fluid. The introduction of tincture of iodine, and of other agents hitherto employed for injection in similar cases, is believed to be prejudicial in cases of congestion abscess, as these frequently irritate and set up inflammation. The solutions used by Dr. Wertheim are the following:—Hydrochlorate of morphia, gr. iv to ʒij of distilled water; camphor, ʒi, rubbed up with ʒij of mucilage of gum-arabic and ʒiv of water, and filtered; creosote water; sulphate of copper, in one or two grains in ʒi of distilled water; and chloride of lime (one to five grains in ʒi of water). An exploring-needle or small trocar is first passed into the tumour, the fluid contents of which are then forced out by gentle manual pressure; then, by means of the hypodermic syringe, ten drops of the solution of hydrochlorate of morphia, or twenty drops of one of the other solutions, are slowly introduced. During the after treatment, the tumour is repeatedly emptied of its secreted fluid by pressure; and the injection is repeated, at first daily, and subsequently less frequently. Ice compresses are applied over the swelling, and the patient recommended to keep to his bed. Dr. Wertheim has derived the following results from his extensive experience of this method of treatment. 1.—It is followed by an immediate cessation of the pain previously existing in the tumour. 2.—There is also a permanent decline of all other symptoms of inflammation, in no instance were local or general symptoms of reaction observed to follow the treatment. 3.—A thick purulent fluid is converted into an exudation which becomes more and more watery, and the quantity of which gradually diminishes up to the end of the third or fourth week, when there is complete absence of secretion, and healing without a scar. 4.—The swelling should not be punctured and injected, unless there be true fluctuation; otherwise infiltrations, which disappear very slowly, will remain behind. In conclusion, Dr. Wertheim states that the sub-cutaneous treatment seems to be indicated in cases of fluctuating buboes, and of recent and mature congestion abscesses, as, in those instances where failure occurs, this result is soon rendered evident, and the practice of incision can afterwards be resorted to.—*Wien. Med. Wochen Schr.* 37,—1869.—(*British Medical Journal.*)

POISONING OF AN INFANT BY LAUDANUM: RECOVERY AFTER SHAMPOOING AND BELLADONNA, BY A. CALKINS, M.D.—In Lansingburgh, N.Y., a child three months old had an enema containing a small tea spoonful of laudanum administered to it by its mother. The operation occurred in the morning, and by midday the child, after convulsions, was verging into deep coma.

A shampooing process was now commenced, relieved occasionally by jets of cold water over the body. Tincture of belladonna, about three drops per hour in water, was also administered.

The treatment was continued for three days and three nights; the child recovered.—*New York Medical Journal.*

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON, AND ON THE EFFECTS OF CERTAIN METHODS OF TREATMENT.

BY J. FAYRER, M.D., C.S.I.

Present —Drs. FAYRER, CUTCLIFFE, and Mr. SCEVA.—August 21st, 1869.

EXPERIMENT No. 1.

A LARGE pariah dog was bitten at 3-24 p.m. in the thigh by a cobra that had been in confinement for some weeks, and had bitten before. Strong carbolic acid was immediately rubbed in, the punctures having been scarified. 3-30.—The Hakeem who administered the "antidote" last Saturday again presented himself with another, and he was allowed to administer as much of it, a fluid resembling the former one, as he pleased. 3-37.—The dog staggers as he walks; another dose of the antidote administered by the Hakeem. 3-40.—The dog is slightly convulsed, pupils dilated, and limbs partially paralysed. 3-42.—Unable to stand when raised; is convulsed. 3-45.—Quite paralysed. 3-48.—Dead—in 24 minutes.

A gentleman who had believed, from some experiments performed under his own supervision, in the efficacy of carbolic acid, witnessed this experiment, and was satisfied that the acid is powerless to counteract the deadly effects of the poison. The Hakeem also expressed his conviction that the cobra-bite is inevitably mortal. Neither of these agents, indeed, had the slightest effect, and the dog died very rapidly, considering its size and strength, and that the snake was not fresh.

EXPERIMENT No. 2.

A small dog was bitten at 3-48 p.m. in the thigh by another cobra, also not fresh like the first. A solution of the powdered leaves of aristolochia indica, for which I am indebted to Mr. ——, of Mirzapore, was then administered, the fang wounds having been previously thoroughly well rubbed with strong carbolic acid. 3-52.—The dog is staggering. 3-57.—The dog is staggering. 4-2.—Convulsed in hind legs; paralysis of limbs commencing. 4-10.—Convulsive twitchings of the muscles generally. 4-12.—Unconscious, and convulsed. 4-15.—Dead—in 19 minutes.

The antidotes were as powerless on this occasion as on others. The aristolochia has long been held in estimation as an antidote; it must, I fear, share the fate of all the others.

EXPERIMENT No. 3.

A small white dog had the inguinal fold of integument raised with two pairs of forceps to stretch it. This was then bitten (at 3-56) by a cobra not fresh, and that had been in confinement for some time. The fangs must almost have perforated the entire thickness of the fold of integument. With a sharp scalpel the fold of skin was at once entirely excised, the bitten part being certainly included in that removed.

4-18.—Looks sluggish, but no positive indication of the action of the poison as yet manifested. 4-27.—Muscular tremors. 4-31.—Deep breathing; lies, looking very sluggish. 4-40.—Very sluggish; muscular twitchings. 4-45.—Can hardly rise, staggers and lies down again. 4-49.—In convulsions. 4-55.—Dead—in 1 hour.

This was a very interesting and very instructive experiment, most clearly demonstrating the deadly nature of the virus and the awful rapidity with which it passes into the circulation. The bitten part was not merely excised as we speak of excising the parts around the spot which the fang had penetrated, but the fold of skin into which the fangs had injected the poison was removed within a second after the bite, for the knife had entered almost before the fangs had left. In fact, it could not have been done more rapidly, and yet within one hour the animal was dead from the effects of the poison. The infinitesimal portion of time during which the cobra's fangs were inserted into the tissues was sufficient to have sent the poison through the circulation, beyond the reach of incision; and yet how very small must that quantity have been. Nothing I have yet seen has so thoroughly demonstrated the deadly effects of the snake-poison.

EXPERIMENT No. 4.

Two drops of venom taken from an old cobra, that is, from one some weeks in confinement, were mixed with 4 parts of water, and injected hypodermically into a fowl's thigh at 4-2 p.m. 4-4.—Drooping; cannot rise when roused; comb and wattles becoming livid, losing their brilliant red color. 4-7.—Lying on its side; convulsed. 4-10.—Dead—in 8 minutes.

Diluting the poison with water has no effect in destroying its action. Death occurred in 8 minutes, and would have probably occurred sooner, had the poison been taken from a fresh snake.

EXPERIMENT No. 5.

A fowl was bitten in the carpus by a cobra at 4-12 p.m., the fangs were deeply imbedded. The part was immediately amputated at the carpal joint, and a ligature placed above to prevent hæmorrhage. This is the same fowl that had precisely the same experiment tried on it last Saturday and recovered. 4-55.—Fowl quite unaffected. At 7 p.m. of the 22nd the fowl was still alive and well. It had thus escaped a second time, and is probably the only living creature that ever went through the ordeal of a cobra's second bite.

It is evident that the immediate amputation of the part saved the fowl's life.

EXPERIMENT No. 6.

A small cat was bitten in the tail by a cobra at 4-27 p.m. The part was amputated above the bite in 20 seconds; this time was purposely allowed to elapse before the operation. A ligature was applied to prevent serious hæmorrhage.

4-47.—The cat still seems unaffected, except that the breathing is hurried. 4-55.—Still vigorous, runs about, but breathes hurriedly. 5-30 p.m.—Seems slightly affected; breathing is hurried. 6 p.m.—No further change. August 22nd, 8 a.m.—Appears natural, but it is evident, from the muco-sanguinous nature of the excreta during the night, that the cat has been slightly under the influence of the poison. August 22nd, 1 p.m.—Looks well; appears free from pain: no symptom of the poison beyond slight weakness. 7 p.m.—The same.

This animal has also escaped; the experiment is not thoroughly satisfactory or conclusive, as the cobra was not fresh, and the tail is not a very vascular part. Still it is suggestive of the benefit to be hoped for from early excision, and seems to show that, although the excision may not altogether preclude the entry of the poison into the circulation, yet that it may limit it to a degree in which it is not fatal.

EXPERIMENT No. 7.

Two drops of carbolic acid put into a large cobra's mouth at 4-50 p.m. 4-52.—Partial convulsive movements. 4-53.—Faint. 4-54.—Dead.

This acid is very poisonous to all snakes.

[illegible] Assistant Surgeon [illegible] August 20th, 1869.

Experiment No. 1.

I have [illegible] Mr. H. B. Sconce, [illegible] Mussooree, [illegible] and [illegible] the [illegible] Nundoo, [illegible] botanical name. The juice of the fresh plant was extracted and [illegible]

A medium-sized, but strong and active dog was then bitten in the thigh, at 3-37 p.m., by a cobra (teturiah keauteah), that had been in confinement for some weeks. One ounce of the juice was administered at 3-39, and some of the juice, with [illegible] was partially paralysed almost immediately after the bite. [illegible] of the juice administered. 3-50.—The dog is lethargic, and breathes rapidly. 4 p.m.—Looks sluggish, and sick; walks feebly, dragging the hind legs. 4-2 p.m.—Another dose of the juice administered. 4-10.—Is sick; rejected a quantity of frothy mucus, tinged with the juice of the plant. 4-12.—Another dose given. 4-15.—Sick again. 4-18.—Constant retching. 4-21.—Staggering; very restless; keeps his nose on [illegible] he walks. 4-30.—Fallen over on his side; convulsed. 4-32.—Violently convulsed. 4-35.—Slight convulsive movements in neck. Respiration has ceased. Heart still beats. 4-37.—Dead—in 1 hour.

This dog, though small, was full grown and vigorous. The snake was not fresh, hence, perhaps, the reason that death did not occur for one hour, instead of 30 to 40 minutes, as is usual.

Experiment No. 2.

A small pariah dog was bitten in three places in the thigh, by a full grown bungarus fasciatus, that was brought from Soorie, in Beerbhoom, about three weeks ago. The snake seemed vigorous, and was just completing the exfoliation of its epidermis. The snake bit at 3-48 p.m.—At 5 p.m. there were no symptoms of poisoning, the dog, perhaps, looked a little depressed, but that might have been from fear. The bungarus would not strike, even when the dog trod on it; it did its best to get out of the way, as I have so frequently seen with other snakes. It was only when its jaws were closed by the snake-man on the dog's thigh that it bit. 6 p.m.—No change. 8 p.m.—Vomited. 9-15.—Lying down; on being raised on his [illegible] Vomited again. 9 p.m.—Lying on his side, in which position he has remained all day; refuses food. 30th, 7 a.m.—Appears to have recovered partially. Noon.—No further [illegible] 6 p.m. [illegible] takes food and water. September 1st, 8 a.m.—Appears to be again suffering from the poison. 2nd.—Worse; unable to stand, or walk steadily. 3rd.—Unable to stand. 4th.—Unable to stand; tries to eat, but takes very little. 5th.—[illegible]

This experiment remarkably illustrates the slow action of [illegible]

Experiment No. 3.

[illegible] by a cobra (keauteah) at 3-54 p.m. At 5 p.m. there was no [illegible] appears to have received some injury about the head and neck.

Mr. Sconce reports that the bungarus died on Sunday [illegible] being the result of the poison.

Experiment No. 4.

A [illegible] fangs were withdrawn the part was cut out; the mass of muscle, including the two fang punctures, was completely excised; certainly, not two seconds of time intervened between the bite and the removal of the part bitten. A ligature was placed tightly drawn around the thigh above the part bitten, and was relaxed just before the part was excised. The object of the ligature was to prevent entry of the poison by the circulation, during the short time that the fangs were actually imbedded in the flesh.

3-42.—Head [illegible] 4-13.—Head nodding; beak resting on the ground, but still easily [illegible] over on the ground. Cannot stand or walk, but can still be roused. 4-25.—Can still be roused, but is very much depressed. 4-35.—In convulsions. 4-40.—Convulsive movements; weaker. 4-56.—Slow respiration; occasional convulsive [illegible]

[illegible] life, it mitigated the effect of the poison, and prolonged life. Had the part not been excised, it is probable that death would have occurred in a few minutes, instead of an hour and four minutes. The inference is, that when the poison is injected into a muscular part, before excision can be practised, a certain amount has already entered the venous circulation, and some of it has, by diffusion, passed beyond the reach of the knife, and so more slowly enters the circulation, and kills. In cases where amputation of the whole part can be practised, the latter danger is obviated; and if done very rapidly, as in the case of the fowl, in which the carpus was amputated, it may save life. The blood coagulated firmly after death.

Experiment No. 5.

A large fowl was bitten in the thigh by the cobra (kalla keauteah), that bit in Experiment No. 4, at 4-55 p.m. In this case the part was not cut out. The fowl was left to its fate, [illegible] those where the part had been excised, the bite being inflicted by the same snake.

5-1.—The fowl is crouching, but is easily roused; has hurried breathing. 5-4.—Drooping rapidly, beak resting on the ground; [illegible] state of lethargy. 5-8.—Springs from the ground with convulsive movements. 5-12.—Violently convulsed; and lies on the [illegible] 18.—Dead [illegible]

This fowl was a more powerful bird than the one previously bitten by the same snake, and yet it lived only 18 minutes, whilst the first that had the earlier, and consequently more vigorous bite, lived 64 minutes. The prolongation of life is evidently due to the excision of the bitten part in the first fowl; and though it shows only mitigation, and not annihilation of the effects of the poison, it is so far encouraging, for it gives time, during which other juvantia may be had recourse to. But it plainly proves, when contrasted with the experiments in [illegible] was performed, that [illegible] of the [illegible] and the limits

of the fang punctures, and that from this diffusion, fatal absorption may take place.

EXPERIMENT No. 6.

A fowl was bitten in the fore-arm, between the ulna and radius, by a cobra, at 4-30 p.m. The part was *immediately* amputated at the elbow joint; a ligature was applied to prevent bleeding. 4-40.—The fowl seems unaffected. 5-6.—Seems quite well.

7th September.—The fowl is still alive and well; it also has been saved by the immediate amputation, as in the case of the cat and the other fowl. The cases in which excision was practised all proved ultimately fatal, though death was delayed. Why is this? The reason, I believe, is, that when excision only is practised, although it may extend beyond the limits of the cobra-bite, yet does not remove so much of the poison as has already so rapidly been diffused throughout the tissues.

The inference from this seems to me very clear, that in case of a bite in the finger or toe in a human being, amputation, if performed without delay, would offer the best chance of life. It is a terrible alternative; but as it is, perhaps, the only chance of saving life, it should be done.

All the snake-men that I have seen admit that they have all little or no belief in any medicines; but that they know of instances where men have been bitten by cobras, and have recovered, by binding ligature in several places tightly round the limb above the punctures, and then by burning the bitten part thoroughly either with a hot iron, a live coal, or exploding gunpowder.

I hope on a future occasion to consider the whole question of "what may be done in snake-bite," and to summarize the results of such observations as I have been able to make myself, or to gather in a reliable form from others.

Present:—Dr. FAYRER and Mr. SCEVA.—September 4th, 1869.

EXPERIMENT No. 1.

A pariah dog was bitten by a cobra (bansbuniah keauteah, of the snake-men), in the fore-arm at 3-42 p.m. Carbolic acid was immediately rubbed into the bites, and within two seconds, a strong ligature was tied as tightly as it could be drawn round the limb above the wounds.

3-44.—The dog is restless; the bitten and ligatured limb is almost paralysed from the tension of the ligature; below the ligature it is intensely congested, and dark blood is dropping freely from the fang wounds. 3-52.—Ten drops of carbolic acid, diluted with an ounce of water, were administered internally. 4 p.m.—The dog is lying down, and is very sluggish; but when he is roused he walks about. 4-5.—Lying on his side; restless; half convulsive movements of the limbs; breathing accelerated. 4-10.—Is now in the sitting posture, with fore-legs stretched out in a rigid convulsive manner. 4-11.—Rises; staggers as he walks. 4-14.—Rises; falls over again. 4-19.—Hind legs twitch convulsively. 4-24.—Convulsive twitchings; is sick. 4-26.—Cannot stand; is convulsed. 4-30.—Sick and convulsed. 4-32.—Heart still beats; no respiratory movements. 4-33.—Dead—in 51 minutes.

This experiment shows how futile the carbolic acid and the ligature are, even when thoroughly and rapidly applied. The ligature was tightened to the extremest strangulation of the limb, within two seconds of the cobra's bite. The carbolic acid was applied even sooner, and yet the symptoms of poison set in rapidly, and death occurred within the hour. The snake, it is to be observed, too, was not a fresh one, and had been some time in captivity.

EXPERIMENT No. 2.

A pariah dog was bitten by a cobra (keauteah), in the inguinal fold, which was raised and stretched for the purpose. The fangs penetrated deeply, and the part was immediately excised by a clean sweep with a sharp scalpel, the part wounded being completely removed. The cobra was not fresh, but it was active and vigorous, and bit fiercely.

4-12.—The dog is restless. 4-27.—Breathing accelerated. 4-35.—No further change. 4-40.—Looks sluggish; eyes blinking; breathing rather rapid. 4-46.—No change. 6 p.m.—No change. 9 p.m.—No change. 5th September, 8 a.m.—Looks well; takes food. 6th September.—Quite well; not affected by the poison.

This dog escaped. The excision in this case proved successful; it was done very rapidly, and extended considerably beyond the marks of the snake's fangs.

EXPERIMENT No. 3.

The poison of a cobra (teturiah keauteah), was removed, and two drops inserted between the eye-lids of a healthy and vigorous young puppy, at 4-12 p.m. The dog was examined again at 4-37 p.m., and the eye was found to have been most seriously affected. There was intense chemosis of the conjunctiva, so much so, that the eye could not be seen, and the lids well puffed out like a ball. The chemosis was very pallid.

4-46.—Dog again examined, and found to be deeply under the influence of the poison. Convulsed in the limbs; unable to stand, and salivated.; starting and whining with a short, snapping, snarling sound; chemosis intense; eye-lids swollen like a ball; the eye cannot be seen. 4-54.—Paralysed and convulsed. 4-56.—Dead—in 44 minutes.

The result of these experiments surprised me much, for it proves that absorption of the poison can take place through a membrane, and prove fatal. I am certain there was no wound or abrasion of the conjunctiva, and yet the influence of the poison was rapid and deadly. Previous experiments have not illustrated this effect of snake-poison; according to most observers, it has been thought that the poison could be applied with impunity to any surface, even of mucous membrane, provided there were no wound.

EXPERIMENT No. 4.

Having exposed the surface of the pectoral muscle of a fowl, and having raised a few of the superficial fibres, without causing the effusion of more than a few drops of blood, two or three drops of the poison, just taken from a cobra (keauteah), were rubbed into the exposed surface at 4-12 p.m.

4-23.—Apparently not affected. 4-26.—The bird is drooping; head declining; rises suddenly with a start, as if awakened suddenly from a sound sleep; head falls over again, and the point of the beak rests on the ground. 4-32.—Rises and staggers; falls over in convulsions. 4-37.—Violently convulsed. 4-45.—Violently convulsed. 4-48.—Dead—in 36 minutes.

This experiment also proves that absorption of the poison takes place through the walls of the vessels; for, although the muscular fibre was exposed, there was scarcely a bleeding point. It shows the danger of allowing the poison to come in contact with any raw or abraded surface.

EXPERIMENT No. 5.

A very large bungarus fasciatus, five feet long, was bitten by a fresh and vigorous cobra at 4-46 p.m. The bite was inflicted near the tail. 6 p.m.—Very sluggish. 7-20.—Dead.

Mr. Sceva notes that he thinks that death may have been caused by the poison collected from compressed during [illegible]

ON THE INFLUENCE OF SNAKE-POISON WHEN APPLIED TO UNWOUNDED SURFACES.

Present:—Drs. FAYRER, CUNNINGHAM and Mr. SCEVA.

September 11th, 1869.

EXPERIMENT No. 1.

Some poison was taken from a cobra (*Naja tripudians*), and a drop inserted between the eyelids of a pariah dog at 2-58 p.m.

3 p.m.—The eye is already much irritated; lachrymation profuse. The dog keeps rubbing it with his paw, and resting the side of the head against the wall; he is very restless and uneasy; chemosis rapidly increasing. 3-5.—Lying down; rubbing the eye, which is much closed; lachrymating and restless. 3-15.—Dog very restless; lies with his head resting against the wall. 3-28.—Eye intensely swollen; the animal is very restless, and whines. 3-35.—He is evidently under the influence of the poison; breathing deeply. 4-4.—Lying quiet; breathing very deep. 4-11.—Lies curled up. 4-16.—Gets up; is quite unconscious, is very weak and cannot stand long; the eye is intensely swollen, with a pale chemosis. 5-15 p.m.—On being roused from a lethargic state, appears stupid and confused; eye intensely swollen; lies down again, and sleeps soundly. 5-31.—Breathing slowly and heavily. 6. p.m.—Sleeping comfortably. 8-30.—Wakes occasionally; looks more natural; rubs the swollen eye with his paw. The constitutional effects of the poison are evidently passing off.

12th September, 3 a.m.—Sleeping comfortably; breathing natural. Swelling of eyelids decreasing, appears lively. 5 p.m.—Still improving. 13th.—Improving; opens the eyelids; the cornea is quite opaque, and there is a muco-purulent discharge from the eye. 14th.—The dog is improving fast. I suspect that the patches of opacity on the cornea, though not so much as before, will be permanent. Eats his food well.

In this case the poison appears to have been absorbed by absorption from the conjunctiva. The constitutional effects were not so serious as in the former case, but the local mischief was very serious, and for a time, at all events, have destroyed the sight of that eye. The intense chemosis, no doubt, caused the corneal mischief. The results of these experiments show how careful we should be to protect the eyes when handling and approaching the cobra or viper in an excited state, when it is possible that, in the struggles of the animal, the snake's mouth might accidently be injected into the eye. In another experiment, which I performed on a dog, and which I shall relate in the course of the experiments, the poison was injected by a dog's tooth, and in the sneeze that resulted, the accident happened. The eye was immediately washed and bathed, and being kept open for a few minutes, and constantly washed, the dog suffered no inconvenience.

EXPERIMENT No. 2.

Some poison was taken from a cobra (*Naja tripudians*), and a drop was inserted into the conjunctival sac of a dog's eye. Violent sneezing and watery discharge from the nostrils ensued immediately.

3-30.—The sneezing and watery discharge continue, and seem to irritate the dog considerably. 3-45.—No constitutional effects of the poison manifested, but the local symptoms continue unabated. Two drops more of the same poison were well rubbed into the palate. 4-15.—No change. Two more drops rubbed into the mucous surface of the cheek. 4-25.—Not affected. The last applications appear to have caused no irritation. 5 p.m.—No change. 12th September, 3 a.m.—Does not appear to be affected in any way by the poison. The catarrhal symptoms have passed away. 13th.—The dog is well.

In this case, beyond the local irritation, no effect was produced.

EXPERIMENT No. 3.

A drop of cobra-poison was inserted into a fowl's eye at 3-15 p.m.

3-18.—Eye already much swollen; membrana nictitans deeply chemosed. 3-30.—Eyelids quite closed; no constitutional sign of poisoning. 3-37.—No change. 4-10.—Another drop inserted into the same eye. Much irritation immediately induced, the fowl is constantly trying to scratch the eyelid with its foot. 4-30.—Beginning to droop, resting its head; sleeping as fowls do when they begin to feel the influence of the poison. 4-30.—Head more drooping. 5.—No further change; no worse. 5-30. Eyelids greatly swollen, but no appearance of any constitutional action of the poison. 9 p.m.—The same. The fowl continued to improve. The eyelids and conjunctiva became less swollen, and gradually recovered; and on the 16th, the bird was perfectly well, and its eye quite right again.

In this case also, as in that of the dog, the local symptoms were very severe, whilst the constitutional symptoms were mild and transient. They especially showed that the poison can be absorbed through the unbroken surface of a membrane, and that the conjunctiva especially is apt to permit of the endosmose.

EXPERIMENT No. 4.

A few drops of cobra-poison were rubbed into the mucous lining of a fowl's mouth at 3-42 p.m. 4-15.—No effects, no sign of either local or constitutional disturbance. 12th, 8 a.m.—Not affected. 13th.—The fowl is perfectly well, and does not appear to have been in the least affected by the poison.

In this case, as in the experiments on fowl and other animals no evil resulted from the contact of the poison with the tongue and mucous surface of the mouth.

The conclusions of these four experiments is not absolutely conclusive as to the extent to which the poison may operate by absorption, through a mucous membrane. They prove that absorption in the case of the conjunctiva, and the schneiderian membrane really does occur, whilst in the mouth absolutely no effect was produced. But the poison was not taken from fresh or vigorous snakes, that is, they had been some time in confinement, and its action may have been impaired. Sufficient, however, is shown to prove how dangerous the contact of the poison with the delicate mucous surface may really prove.

ON THE RELATIONS BETWEEN THE VARIOLOUS DISEASE OF CATTLE CALLED "GOOTEE" AND TRUE VACCINIA, WITH SPECIAL REFERENCE TO INOCULATION AND VACCINATION.

By Kenneth McLeod, A.M., M.D., L.R.C.S.E.,

Assistant-Surgeon, 6th Native Light Infantry.

(*Continued from page* 209.)

III.—*As a rule, one attack of "gootee" or "rinderpest" is prophylactic against another.*

As regards rinderpest, the evidence of immunity against a second attack is so strong, that the proposition has passed into a current belief among scientific men both in England and on the Continent. Professor Simonds, in his evidence before the Cattle Plague Commission, says that "it is a well-known fact that an animal never contracts it twice."

The report of the Veterinary Department of the Privy Council on the cattle plague of 1865-66, affirms that "it rarely occurs more than once in the same animal." These statements are authoritative, and were confirmed in England by careful experiment by Professor Varnell. In India the matter has not been so clearly brought out. One authority, Mr. Sawers, of Culna, says that a second attack of gootee is "almost unknown." Veterinary Surgeon Farrell expresses an opinion to the same effect. The point is an important one, and should, when opportunity offers, be made the subject of careful observation. Meanwhile, there is every reason to believe that, in common with all other exanthems one attack secures immunity from subsequent seizures. This is also asserted to be the case of a disease of a similar kind, which Veterinary Surgeon Gudgin studied in Burmah. He describes no eruption. It still remains to be discovered whether the eruptive variety (*gootee*) is prophylactic against the non-eruptive variety (*pushimah*) or vice versâ; I can find no evidence on this point. This feature of exanthematous diseases would seem to occupy a very high place among the points which determine their resemblances and differences; capable even of distinguishing different varieties or epidemic outbreaks of the same specific disease. It is the most delicate test which comparative pathology possesses, and capable of being largely employed in the way of inoculation.

IV.—*"Gootee" and rinderpest are capable of being communicated by "natural infection" to animals other than cattle.*

"In India different observers have noted that buffaloes, sheep, goats, deer, horses, pigs, fowls, ducks and pigeons are liable to be attacked both by "*gootee*" and "*puschima*." In Ceylon, according to Sir J. E. Tennant, elephants are subject to cattle "murrain."

In Europe, sheep, goats, and deer have been known to take the rinderpest, but not so easily as the cow. A curious observation is made in the second report of the Cattle Plague Commissioners (page 6.)

"It," (the rinderpest), "re-appeared in November, (in France) in the *Jardin d'Acclimatation* in the *Bois de Boulogne*, having been carried thither by two gazelles brought from India, which had been for three or four days in London. From them it rapidly spread to yaks, zebus, goats, and fallow deer, and the sacrifice of about 35 of these animals was necessary to arrest its progress."

As regards sheep, the Report of the Edinburgh Cattle Plague Committee, (Appendix to Cattle Plague Commissioners' 3rd Report, page 223), after extended observation, states that "they are by no means so liable to take it as cattle, and that they almost generally take it in so severe and fatal a form." This seems to express the general truth; but in this as in every other point there are exceptions to the rule, depending on circumstances of the particular epizootic prevailing, which, until we know what conditions determine the comparative severity of different epizootics and epidemics in different countries, districts, and seasons, we can't explain. With regard to the small-pox of domestic fowls, it is a well-known disease, but no proof exists of its being derived from cattle or man, except the general statements made by non-professional reporters. Dr. Macpherson ("Cholera in its home," page 14), says—"there is a disease among cattle, called by the natives small-pox, having some analogy with rinderpest, and also a disease among fowls, which have sometimes prevailed, simultaneously with small-pox in Lower Bengal, but oftenest quite independently of it."

I have only had one opportunity of studying this disease. The affected animals fevered, patches of scarlet appeared on the comb and bare parts of the head on which dry scabs formed, the eyes and nostrils watered, and subsequently mattered, and, they died in four or five days. I found aphthous patches on the conjunctiva, pharynx, and larynx, punched out ulcers of the stomach and congestion of the small intestine, clots of decolorized blood in the heart, and emphysematous and lobularly congested lungs. I procured a lot of healthy fowls for the purpose of making some experiments; but unfortunately (!) the disease subsided. I know no instance of the "natural infection" of man, by either *gootee* or rinderpest. There is another epizootic called aphtha epizootica, or foot and mouth disease, in this country called *khorah*, which has been communicated to man by natural infection, inoculation, and through milk (Dr. W. Bilfour, in *Edinburgh Medical Journal*, February, 1863); but no positive evidence exists of the disease in question having been "taken" by man. On the contrary, there is evidence on the other side. Mr. G. G. Macpherson of Moorshedabad, writing in December, 1832, says:—"It is an extraordinary fact, and worthy of remark, that, while the cows were thus affected, no case of variola amongst the natives in the village presented itself." This is consonant with universal experience. The most that has been noticed is, that an epidemic of small-pox and an epizootic of *gootee* have prevailed simultaneously, as was recently observed in Palamow. This accords with the observation made in England, that foot and mouth disease was more common and virulent in the cattle plague year, and that "the year was peculiarly favourable to the spread of zymotic diseases generally, and to the rapid decomposition of organic matter." (3rd Report of Cattle Plague Commission, page 4.) Notwithstanding this, I am far from denying the *possibility* of communication of this disease to man by natural infection. One carefully observed positive instance from which all sources of fallacy were excluded would weigh against any amount of negative evidence.

Evidence exists that in Russia at least man is liable to be infected with the Siberian plague of cattle. In the Russian "Medical Laws," para. 1721, it is stated that the Siberian plague is sometimes communicated by cattle to man, and minute detailed instructions are contained to prevent infection of attendants upon cattle by contact with sick animals. Eating diseased food, being stung by insects which have settled on sick cattle, consuming milk, butter, or cheese derived from them, or by inoculation of cracks, cuts, or eruption.

Attendants are advised to wear tarred gloves, and surgeons specially enjoined to wash their whole body with soap and water!

Consul General Murray, writing from Odessa, states that "men are known to have caught the disease from cattle, but such instances are rare."

(Appendix to report of English Cattle Plague Commission.)

Inoculation is not only a means of conveying contagium from [illegible] capable of propagation by infection or not, but is, in many cases, the only means at our disposal of conveying it from one species to another.

[illegible] Veterinary Surgeon Thacker inoculated three animals with matter [illegible] prevailing in 1865 on the Neilgherry Hills. All these took the disease and two died of it. Veterinary Surgeon Farrell more recently communicated gootee to some cattle in the 24-Pergunnahs, by inoculation. These experiments simply prove the *easy* liability of cattle to be inoculated by both these forms of diseases. In Europe, however, experiments have been conducted on a very large scale indeed, mainly with a view to discover whether a mitigated form of disease, with little or no mortality, could be produced by any means. The English experiments proved that it was easily and with certainty communicable by inoculation to cattle of all sorts, sheep, goats, and deer. Animals other than cattle were not so easily effected. A single experiment was tried on a pig and donkey by Professor Varnell, but without effect.

On the Continent, certain communicability has been established over and over again.

Curiously enough, Indian experience is in advance of English regarding communicability by inoculation to man. Dr. Murchison (Appendix to Third Report of the Cattle Plague Commission, page 77), has the following, which, from its extreme importance, I [illegible] at length :—

"In 1837, Mr. Brown, a Surgeon in Assam, inoculated four children with matter taken from cattle labouring under a very severe epizootic of *mhata*. He made use of the 'scales or scabs taken from the back or abdomen,' reducing them to a pulp with water. 'In all four vesicles in every respect resembling, in their progress and when mature, genuine vaccinia made their appearance, and went through the same regular course, the constitutional disturbance on the 8th day only being more severe than I have usually seen it in the latter. From these many other native children were inoculated, and no doubt of the genuineness of the lymph were excited until two English children were punctured from one of them, and it was then found that small-pox supervened in both of these cases; and this was more than suspected to have happened in many of the native children who had generally dispersed a few days after the operation, and were not afterwards heard of. One of the English children, unhappily died.' In 1837 another series of inoculation was performed (by Mr. Macpherson in Bengal), with virus from diseased cows, on which occasion an eruptive complaint of the true [illegible] was produced.

"The same phenomena were observed at Gwalparah by Mr. [illegible] In several of the cases the symptoms were so severe as to excite apprehension that the disease would terminate fatally. He was so strongly impressed with this fact, that he thought it would be better to take human small-pox rather than cow small-pox for inoculation, when the latter assumes its dangerous and fatal form.' "

The foregoing is, to my mind, final as regards the question of inoculating the human subject with "gootee." It "takes," and "takes" severely, and produces a variolous disease. Whether it is [illegible] and any repetition of these experiments would be unjustifiable in the highest degree. Appended to the same report of Dr. Murchison is a case by Mr. Ceely, of Aylesbury, of a cattle inspector who was accidently inoculated while assisting in performing a *post mortem* examination of a bullock recently dead of cattle disease. A vesicle formed on the spot which went through all the stages and appearances of the vaccine vesicle, though more slowly. Both local and constitutional symptoms were, however, most severe. This case is figured by Dr. Murchison, and Mr. Ceely and others recognised the [illegible] to the vaccine vesicle.

In 1867, Professor Simonds requested some of the matter of gootee to be sent home for experiment, but Dr. Green, the late respected head of our department, strongly discountenanced the scheme; and I believe the request was not complied with. While we possess in vaccination such a mild, manageable and at the same time efficient agent, dangerous experimentation with gootee or rinderpest is obviously improper.

VI.—*A person [illegible] by inoculation [illegible] cannot take a second attack.*

I have not included gootee in this proposition, because clear evidence and further experiment is required to determine the point. The only experiments I know of are those of Veterinary Surgeon Farrell, who inoculated two animals with gootee. They took the disease, recovered, and subsequently had, on exposure to infection, milder attacks of the same disease. In England this point was not clearly brought out; but on the Continent, abundant experience exists in proof of it. Numerous experiments have proved that *in certain circumstances* animals once inoculated with rinderpest, which took the disease severely, resisted the strongest re-exposure to infection. The breed of the animals, and the nature of the epizootic, whether mild or severe, whether *eruptive or non-eruptive*, seems, however, to have modified both the nature and degree of severity of the resulting symptoms and the protective power of the operation. So uncertain and unsatisfactory were the results obtained by various observers in Russia at various times, and in varying circumstances, that a Commission appointed to investigate the subject could not recommend the universal adoption of inoculation.

VII.—*The disease [illegible] is less fatal than that communicated by natural infection.*

This, again, while it seems to be the rule, is subject to exceptions, depending on the kind of animal operated on, on seasonal and epizootic influences. The result of English experiments is thus stated by the Commission:—"The virus of cattle plague, after transmission through bodies of sheep and goats, returned into the body of an ox, is found to have lost none of its intensity. Repeated transmission of the virus through cattle weakens its power, but in no very sensible degree. At present, the vehicle of the poison, whether it be blood serum or mucous discharge, appears also to influence its action very little, (if at all), while mere dilution has no effect whatever." (3rd Report, page 10.) On the other hand, experiments on the Continent have proved that the mortality of the inoculated disease is reduced to about 5 per cent., and that repeated transmission does modify its virulence materially. A less fatal inoculated disease seems to be unprotective. It must be remembered, however, that the English disease was most virulent and foreign to the country, and that the experiments were conducted in towns where the disease was more virulent and fatal, while the Russian experiments were conducted in the home of the disease, upon a different breed of cattle; and it appears to be a well ascertained law, that the higher the breed of an animal the more easily and severely it

takes an infectious disease (Varnell.) It would be foreign to my object to discuss the value of inoculation as a prophylactic measure to be generally adopted. My concern is with its pathological value. Still it may be well to state that the conclusions of both the English and Russian Commissions were opposed to its employment; that the same arguments which hold against human variolous inoculation obtain here also; that it is only applicable to a country where the disease is indigenous, or to a limited infected area, and *that its employment must be combined with the strictest isolation and precautions against the spread of the disease by natural infection.*

On the other hand, the experience of Professor Simonds with ovine variola, and of Dr. Layard in the epizootic of cattle disease in 1780, shews that when mitigation *and* protection can be obtained, and when it is morally certain that, *notwithstanding opposite appearances, the disease must spread over a certain area*, artificial induction of it within that area with careful isolation is not only permissible, but advisable. The experience of human inoculation before vaccination superseded it, and more particularly the experience of it in this country, where isolation of the inoculated is a religious duty, coincides with the foregoing.

We have yet much to learn ere we can explain the anomalies of exanthematous diseases, either as epidemic, or affecting individuals. What determines severity of epidemics, or cases, or the reverse? Why do some individuals escape attack and seem to bear charmed lives, while the majority succumb? Why do some individuals have repeated attacks of the disease, while the rule is one attack? What determines the exceptions to the laws of (1.) greater mildness and less mortality of the inoculated disease; (2.) mitigation of virulence by transmission through a different species?

The study of anomalies promises more fruit than the study of normal events, and similar anomalies occur in epizootics and epidemics.

VIII.—*While vaccination is protective against human variola, it protects neither against rinderpest nor ovine variola, nor are the latter three mutually protective.*

As to rinderpest, it was found that "the vaccine virus, whether taken direct from cows, or after passing through the human body, has no effect on cattle plague, and that human small-pox and the virus of the small pox of sheep have likewise no influence." (3rd Report, Cattle Flague Commission, page 10.) The Scotch Cattle Plague Committee further found that natural cow-pox was not prophylactic against rinderpest, nor *vice versâ*, and cite well authenticated cases in proof (op. cit., Appendix, page 221.)

As to human variola, proof is wanting that rinderpest or the proper variola of sheep, horses or camels, is prophylactic against it, while vaccination, or the virus of human variola, transmitted through cattle, sheep, horses, (?) or camels (?) has been triumphantly proved so. Finally, neither vaccination nor variolation are any protection against ovine [illegible]. (Simonds.)

CONCLUSION.

With the foregoing facts and considerations in view, it comes to be a most interesting question—which is the specific variola of cows, gootee or vaccinia? I strongly incline to consider gootee or rinderpest the pathological homologue of human variola. If this view is correct, another question of importance arises, namely, what is vaccinia? To this I should answer:—It is specific human small-pox manifested in the cow. How cases of spontaneous vaccinia arise I am not prepared to say. But the contrast between the rarity of vaccinia and its feeble contagiousness among cattle, and the extremely infectious nature of gootee and rinderpest is most marked. Then, while gootee and rinderpest are easily and effectively communicated by inoculation to cattle, the inoculation of cows by human variola is most [illegible] and the result [illegible] in obedience to the law above illustrated, that an inoculable disease is with difficulty communicated to a species to whom the disease is foreign, and the manifestation is wider. Dr. Aitkin cites a case where inoculation of a cow, from a fatal case of variola, furnished matter which produced variola fatal in three cases in man. (Science and Practice of Medicine, 3rd edition, page 270.) Besides, cattle have been observed to take human variola by natural infection, in the form of vaccinia (op. cit., page 268.) Moreover, retrovaccination, or successive transmission of vaccine matter from man through the cow, seems to weaken its power, while "after successive re-inoculations on man it regains its activity" (op. cit., page 271.) The truth seems to be, that each species of animal has its specific variolous disease; that the specific variolous disease of each species is protective against itself and not against the others; that when communicated to a species to which it is foreign, either by natural infection or by inoculation, the manifestation of the disease is modified. The conditions of modified manifestation are not well understood, and require further elucidation by experiment and observation. The contrast between vaccinia and gootee only serves to confirm the original conclusion of Dr. Jenner, that small-pox and cow-pox are *identical* diseases. It only remains for me to state, that while gootee is but too common in India, I have never yet heard of a case of spontaneous vaccinia in this country. Any one observing such a case would confer a signal benefit by publishing the fact; but the greatest care would be necessary in exactly discriminating its characteristic features. If an undoubted case of vaccinia were observed, it would be of the greatest interest to ascertain—

1. Whether the case had any relation to gootee, as a relic of an epizootic of that disease, as derived by natural infection or accidental inoculation from a case of gootee, or whether it apparently arose as a disease *sui generis*.

2. Whether the disease could not have been derived either by inoculation or infection from human small-pox.

Both in France and England the question of animal vaccination is now attracting attention.

The advocates of the system appear to proceed on the supposition that vaccinia is essentially a disease peculiar to the cow, and apart from the convenience of this system of multiplying the supply of lymph on an emergency, a reason which all must admit, plead more profound grounds of its universal adoption. If the surmise which I have thrown out, that the cow is merely the laboratory in which the virus of variola *(humana)* is tempered, and mitigated into the form of vaccinia, is correct, the practice of animal vaccination will come to have a different significance, and the variolation of cows, rather than their vaccination, will come to be the correct mode of supplying an efficiently protective lymph.

RESULTS OF SANITATION IN INDIA.

BY W. J. MOORE, L.R.C.P.,

[illegible]

(Concluded from page 206.)

WE were told in the last budget, that during the next five years barracks throughout India for European troops, will cost from ten to eleven millions of pounds sterling, one and a half million being set apart for the same purpose during the present year.

In addition to this expenditure, we have an elaborate sanitary supervision in every cantonment, and a commendable care exercised over every preventible disease; the shadows of which coming events were not perceptible even when I entered the Honorable Company's Service. But it is now evident, that what- [illegible] and mortality, or in invaliding, for the British occupation of the

attending a soldier's life, is evident. The native will benefit [illegible] degree; the latter cannot stand against the debilitating effects of the heat and malaria of the climate. Something, certainly, can be effected for Europeans on the plains, but not much. One [illegible] duced mortality, without an increased invaliding list. And this is a more extensive occupation of the elevated regions and hill [illegible] "islands in the plains." Since the days of Lind, Jackson, and Hunter, medical officers have not ceased to recommend the extension of hill sanitaria. But it is only during recent years, that the value of hill climates has been mentioned in its most important bearing, viz., as *preventive* agency. So lately as 1861, [illegible] as Ootacamund, all the British troops in India, even if politically practicable, would not prove, in my judgment, the best method of fitting the European soldier of the maximum of efficient service, with the minimum sacrifice of life and health. Doubtless, Europeans permanently residing in a hill climate, such as Ootacamund, would retain much of their native vigour, but they would not be efficient for the contingencies of military service in India. If suddenly called to the plains for service in the hot season, there would be a heavy sick list, from *seasoning fevers*,† and biliary derangements. Then the sevice over, and the men exhausted by heat, fatigue, and sickness, moved back to their hill cantonments, would be subjected to much mortality and invaliding from these forms of disease, for which the cold and rainy seasons of hill climates are unsuitable. Were it possible to transport, *in a few hours*, troops from the camp at Aldershot, to the [illegible] use them for active service, and return them *broken in health*, in a few hours from India to Aldershot, any time between October and May, the result need not be told." But it may be well questioned, if such troops would be *broken in health*, by the supposed duty. I believe, with ordinary care, they would suffer far less than a regiment some years in India, entering on the same campaign. As a rule, Europeans enjoy the best health, during the first period of their sojourn in India, and there is no valid reason why soldiers should prove an exception.

In proof of the heavy sick list, which, it is presumed, would result, by bringing troops from the hills for active duty on the plains, the cases of the 1st and 2nd Fusiliers and 75th Regiment [illegible] of the mutinies from Dugshai, Subathoo, and Kussowlee. They made forced marches; they entered a cholera-stricken district; and the 2nd Fusiliers left their blisters behind. All these regiments had been some time in the country, before location on the hills, and the 75th had only been at Kussowlee one month. Doubtless, troops called upon to endure similar exertions, under similar circumstances, would again suffer from cholera, sunstroke, and fever, as these men did. But I fail to perceive that [illegible]

* [illegible]

* [illegible]

[illegible] As I have [illegible]

[illegible] moving from the hills to the plains would suffer in like manner, even on active service. On the contrary, I believe such would not be the case, and it certainly would not be so in the cold weather. Moreover, there can be no doubt, that Europeans descending from *the hills would take the field* with an amount of vigour which they would not bring with them from their stations in the plains. Their blood would be without deterioration by heat and malaria, and although some, of course, would fail, as would be the case in any European campaign, the majority would require months to bring them to that state of cachexia, which they would have acquired on the plains, before the order for active service arrived." But even granting this was not the case; even supposing other regiments, on extraordinary occasions, should suffer as those above enumerated, such instances, as the occasion calling them forth, would be exceptional.

It is that weakening debility, and preparation for organic change, the effects of malaria and heat, consequent on prolonged residence in the plains, which renders Europeans so prone to fatal maladies, on occasions when extraordinary strain is applied on the physical powers. I feel quite convinced, we shall never show both a small mortality and moderate invaliding list, until we have more Europeans in the hills. The mistake too commonly made hitherto regarding hill climates, is expecting them [illegible] The true value of the climate of the Indian hill ranges and elevated regions is preventive, *not* curative. There are many maladies either not benefited or actually increased by hill climates. But the location of a regiment of healthy men, on a hill range, is a very different matter to the simple utilization of the site, as a sanitarium or summer residence. I believe a regiment fresh from Europe, placed in the hills, would enjoy the ratio of health appertaining to Europeans of similar class, in very many temperate climates. The systems of the men would not only be exempt from the debilitating effects of heat, dry or moist, during the hot or monsoon seasons, but would also experience the bracing effects of the cold weather; an advantage hitherto too much ignored, when forming an estimate of the value of hill climates. But to secure success, none other than healthy men, newly arrived in the country, should be so located. Thus to situate corps debilitated by lengthened exposure to the heat of the plains, and with many of their members, as must be the case, more or less diseased, or inclined to disease, would be equivalent to increasing sickness and mortality. The physiological influences of change of temperature, from heat to cold, more prolific of congestions, than the reverse, cannot be ignored in the consideration of this question. Hill climates, should, indeed, be made to serve as the preparation of the system of the European, for the latter portion of his service on the plains below. Of course, there are some localities which must be garrisoned at any cost of money or life; but with the large invaliding list, which has now replaced the former excess- [illegible] the ten or eleven millions, still to be spent on barracks at stations on the plains, could not be more judiciously expended in housing a larger number of our soldiers in the hills.

Before concluding, I have to remark that there is, unfortunately, too melancholy corroborative evidence of the fact, that invaliding is the chief cause of reduction of mortality [illegible] favour

* [illegible]

hill cantonments. Although the mortality among the men has decreased, the death ratio of the soldiers' wives and children has remained at almost the same figures. According to the best authority,* European females died in barracks in former years, at the rate of 44 per 1,000 in Bengal; with a mean for the whole of India of 35·47 per 1,000. In the four years ending 1865, the mean mortality of this class was 40. In Bengal, in 1867, the death ratio of women was 46·21, having never been less than 42 per 1,000 in any previous year, excepting one.† Years back, the mortality of children was 84 per 1,000 in Bengal, 70·7 in Bombay.‡ In 1865, the death rate in Bengal was 83 per 1,000; in 1866 it was 75 per 1,000; and in 1867 104·9 per 1,000.§

Now the secret of this continued mortality among the women and children appears to me to be continued residence in the country. Women and children are seldom, if ever, invalided. It is also the married man who generally prefers remaining in India. These two causes keep the women in the country; and they die at the same rate as before. But it is certain, if sanitary regulations, as now enforced, if expensive palatial residences, if care and attention, had materially reduced the mortality among the men, the women and children, participating in these advantages, should also show a reduced death ratio. But this is found not to be the case, and is therefore the strongest evidence that sanitation is not altogether moving in the right direction. Among other matters, it may be questioned if the massive barracks and hospitals now erected are necessary or ever positively injurious. Robert Jackson long since stated he would sooner treat his patients under a hedge row, than within the walls of a crowded building. And we all know that the most solid structures are liable to become contaminated, by prolonged residence, especially when the dwellers therein are sick and diseased. It is therefore at least worth consideration, if the [illegible] of the most expensive sanitary works, now going on in India, *viz.*, the building of massive new barracks, may not be curtailed. Protection from the weather may be afforded, to as great an extent as desirable, in less costly, if not so durable dwellings. And a periodical change of site might not prove among the least important sanitary progress.

THE DELHI ULCERS.

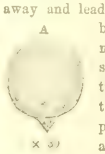
By J. Fleming, M.D., F.R.C.S.,
Staff Assistant-Surgeon.

The pathology and treatment of the so-called boils and [illegible] prevalent in Delhi have been discussed in the medical journals both in England and this country.

Boards composed of medical officers of great experience have investigated their nature, and medical officers serving with European and Native troops in Delhi, have at various times recorded their observations, and pointed out lines of treatment, prophylactic and actual, besides advancing theories as varied and numerous as the imagination could produce, without that success which might have been expected. Still the "Delhi boils" remain a paradox. Notwithstanding all the suggestions that have been pointed out for their removal, they are yet very prevalent, and affect more than 15 per cent. of the troops stationed there. I have been induced "to record what I have observed regarding these boils and ulcers" while stationed in Delhi during the year 1867 and I hope [illegible] opportunities may investigate this interesting subject more fully [illegible]

* Chevers' [illegible] Vol. VII.
† Sanitary Commission [illegible]
Chevers' Op. Cit.
§ Sanitary Commission [illegible]

or mitigate at least, a loathsome and unsightly disease, which is a cause of a good deal of inefficiency amongst the soldiers, and of [illegible] every European in Delhi. The Delhi boil is a misnomer, and calculated to mislead as to its real nature. It is a morbid growth, affecting the skin and subcutaneous tissue, which after some time ulcerates, and has hardly any of the characters of a boil; in fact, inflammation is conspicuous by its absence until the ulcerative stage. Its commencement, which is well known, resembles a mosquito bite in its external characters, and without any trace of inflammation. This little light-red spot increases in size slowly, is well defined, and becomes raised above the surrounding skin. The growth continues to spread for two or three weeks, or more, and its characters during that time are unmistakeable. In some cases, when about the size of a pea, it can be moved backwards and forwards under the skin; in others it is incorporated with it, and that more especially towards the ulcerative stage. As it progresses it becomes more elevated and vascular, the tortuous dilated vessels passing over it being easily recognised, and accompanied with a pricking sensation and itchiness in the majority of cases. A vesicle forms at the apex, which discharges a pale yellowish serous fluid, and then ulceration begins, and spreads rapidly until the whole of the growth is destroyed. During the growth of this tumour, and up to the period when ulceration begins, it appears relatively very transparent and often shining, sometimes rough and scaly, and if examined by a good lens will show one or more yellowish spots deeply seated about its centre. The tortuous dilated vessels, the transparency of the tumour, and the yellowish deep seated spots are characters which I have observed in many cases before ulceration. If one of these yellow spots be cut down upon with dissecting needles, a small circular yellowish body, with a glistening capsule, just able to be detected by the naked eye, will make its appearance, and can readily be removed. But great care must be taken during the operation of extraction, as the least flow of blood will be sure to carry it away and lead to disappointment. Drawings of two of these bodies are shown with the aid of the camera, magnified, from a preparation now in my possession. They were extracted from two separate tumours in January 1866 at Delhi, and I was fortunate enough to obtain others in July from patients sent to the convalescent depôt at Landour; and I much regret that those specimens obtained at Landour have been lost. Examined with the microscope the structure of both seems identical, and composed of an apparently fibrous envelope, arranged in concentric laminæ, enclosing fluid contents and probably something else. They are of a yellow colour, and not unlike in general appearance the ova of animal parasites, with the exception that they are not so transparent, and do not show their interior clearly, which may be owing to their greater relative size. They have many characters in common, and there is a considerable quantity of granular matter in the walls of the capsule. I shall at present call them ova for want of a better name, or until their real characters have been satisfactorily determined. In figure B the pressure of the thin glass cover used in mounting has burst the ova at one side, and an embryo is seen partially extruded. In figure A the pressure of the glass cover has caused merely a projection at one place, but most probably, this ovum did not arrive at the same state [illegible]







every direction, some of

mode of growth, the

many causes that have been advanced as to the origin and nature of the "Delhi ulcers," since they must be sufficiently known by every medical officer serving in India. The presence of even excess of nitrates and nitrites in the waters of Delhi, nor that account for the symptoms and appearances shown by the "Delhi boils." If these tumours and ulcers, endemic in Delhi, were the manifestations of a constitutional disease, how then can the action on them for good or evil. The matter from a "Delhi ulcer" is said to produce, when inoculated in a healthy person, could hardly be expected if the disease was of a constitutional thorough microscopic analysis of any morbid growth, but I venture to state that any progress made towards a solution of the origin and causes of the "Delhi ulcers" will be derived from such analysis. Chemical analysis, as an aid to diagnosis it to throw any light on the nature of the "Delhi ulcers," as I would on the origin of scabies, or the cause and prevention of latter are pretty well known altogether by the assistance of the against every source of fallacy in the microscopic examination of the specimens from "Delhi boils," in my possession, I have come to the conclusion that they are caused by a parasite, pro-

view, the treatment of the "Delhi boils and ulcers" is simple and evident, following in fact as a natural consequence, and will go far to prove their parasitic nature. As soon as it appears it completely, whether it be with a strong caustic solution or the actual cautery introduced by Dr. J. Murray; and this is successful. If ulceration has been established for want of attention to the earlier stages, strong caustic lotions should be, from time to time, applied, and the sore treated according to general measure, to the early effectual local treatment. No doubt the a proportionate diminution of disease, but there is reason

Mean Meer, 22nd March, 1869.

CASES FROM PRACTICE.

A CASE OF APHASIA

By J. FAYRER, M.D., C.S.I.

THE following notes were taken at the time of a very interesting case of aphasia that recently came under my care. The patient was an English officer, holding an important post; figure, and of regular and temperate habits; very intellectual, and much given to study. The duties of his office were of an important and responsible nature, and just before the illness, for which he came under my care, they had been unusually domestic affliction, from the illness and death of a very near relative. He had lived alone, and had almost entirely secluded himself from society since his return from Europe some months little, and he had apparently enjoyed the relaxation and change.

fit."

morning. He had written a note early that morning just before

His servants say that he was lying on his couch, when they suddenly saw that he was convulsed in the right side, and that, on going up to him, he was quite unconscious. It was 10-15 a.m. when I saw him; he was lying on his couch with his eyes closed, but opened them directly I spoke, and appeared to recognize me; he then began to talk incoherently. He appeared not only to be unable to collect his ideas, but also to resembled "played." This came in as the second or third word of every sentence he tried to give utterance to, and he spoke very fast. For example, after replying to my question, how are you? he said, "I am better, I have played," (then incoherence)—"I don't know what brought this on,—"I have paid,

pently examined his chest before the attack, and the urine had

Having lost a near relative from Bright's disease, he had been

face pallid; no paralysis; no alteration in the tone of his voice; articulation was perfect, his tongue was clean; his bowels had very well when he got up, and they were surprized to see the convulsions. They say, he was not hot at the time, and they noticed particularly, that it was the *right* side that was convulsed. Ice had been applied to his head before I arrived. The urine was examined, and found to be free from albumen. It was acid in reaction, and of normal sp. gr.

which probably indicated degenerate cerebral vessels, perhaps an embolism in one of them; or that there had been some slight hæmorrhage, or congestion, or transient interference with the cerebral circulation, and probably great general exhaustion of the nerve centres.

perfect rest and quiet; ice to be applied to the head if it became hot, beef-tea to be given occasionally, and the bowels to be acted on by a simple enema. I saw him again at 4-30 p.m., and he looked pretty well; he replied in a word or two to every question, but immediately lapsed into a state of incoherence: he to the same word that haunted him in the

morning, but he substituted his words, and seemed totally unable to guess the one he wanted. He evidently understood all that was said to him, and tried to answer. A friend asked him to go out, stay at the house: he thanked him, and was able to say he preferred remaining where he was; but he was quite unable to continue the conversation, and became incoherent. I left instructions that he should be well watched, and that beef-tea and the medicine should be given regularly.

June 9th.—He is in much the same state: pulse about 120; temperature of body somewhat high. He replies to a first question intelligently, but soon lapses into incoherence. I asked him to read; he took the book and pretended to do so, but it was the most incoherent jargon; all the time he looked quite intelligent. He has taken some nourishment, and is said to have slept. But for his shaven head, he looked fairly well. Cold had been applied to the head, and his bowels had been relieved. He was attended by a careful sick-nurse. In the evening I found him much the same; no improvement in his speech. Dr. C—— had seen him with me in consultation at 1 p.m.

June 11th.—He remains much in the same condition: pulse from 110 to 120; skin cool, perhaps slightly feverish at times; the bowels act regularly. Takes readily all fluid food that is offered, and sleeps well. He is very quiet, tractable, and gentle; does or attempts all that he is asked to do. He walks with a peculiar gait, the body being bent forward: this is merely an exaggeration of his ordinary carriage. His tongue is slightly coated with whitish fur, and there is a peculiar and somewhat offensive odour in his breath. A small blister had been applied to the nape of the neck, which has risen well, but he does not complain of it in the least. He seems quite tranquil, and even happy; appears to recognize his friends, but he cannot tell, or rather, perhaps, he cannot remember, their names, or the words he wishes to say to them. Yesterday I asked him to name one of his friends who came into the room; he smiled and said,—"Oh that's go-up," and then he muttered some unintelligible words. He can reply to a first simple question, such as,—"have you slept or eaten well?" He answers "oh yes, or no," as the case may be; but the next question, however simple, puzzles him completely, and the reply, for he tries to answer, is the most incoherent nonsense—words without connection or meaning. I asked him to read yesterday, and gave him a book; he looked for his spectacles, put them on, then looked long and earnestly at the book, muttered a few words, and put it down. I then asked him to write a note; he sat down at his writing table to do so, put on his spectacles, took pen and ink, adjusted the paper and sat looking at it. Then, after about a quarter of an hour, repeatedly making efforts to begin, and saying,—"I can't write, oh that's just it!" he scrawled three figures of 8. To-day, the 11th, he read a few words correctly, and then became incoherent. He sat down to write at my request, and after about 20 minutes' delay, he produced the note No. 2, and then seemed so exhausted, that he was glad to go and lie down. It is difficult to say how far he knows what he is doing. In the midst of the simplest reply to a question, he puts his hand to his forehead, appearing to try in vain to recall the word or idea he wants. For example,—have you done so and so?" "Oh yes!" "Oh yes!" "Why?" "Because I—I—I—because, because it's a right height." I have directed that he shall be very closely watched day and night, but he is tractable and gentle in the extreme. Nourishment with a little wine to be given frequently; an aperient when the bowels are confined; perfect quiet; the head to be kept cool; the feet warm, they are sometimes cold.

June 12th.—He seems rather better to-day: pulse 84; skin moist; head cool; bowels freely opened. I tried him with reading and writing: some words correctly, but others he changed altogether. His writing is appended in Nos. 3, 4, 5. He answers questions pretty well, and looks as if he understands what he wants to say, though he is unable to remember the words he requires. He [illegible] numbers of "Good Words" lying on the table, and said there was something in them that was very good, but he could not remember what it was, or who wrote it; but he took one of the numbers up, and opening it at Gladstone's article on "Ecce Homo," then said, "take it with you." All this was said as by one in perfect health, but he lapsed immediately into incoherence. He has eaten and slept well; is in good spirits, and answers cheerfully to any question. The same treatment continued.

June 13th.—He looks better; is sitting up; slept well; and is taking food freely. Had a pint bottle of claret, and a glass or two of sherry [illegible] him if he had read the newspaper, and he replied, "Oh yes; Eyre! Eyre, Chief Justice." He then took up the *Englishman* and read that "the Chief Justice, and all the [illegible] had [illegible]," he making one or two mistakes, but on the whole had more command of words than he had yesterday. He remembered my name, and mentioned it several times, but he could not manage that of an intimate friend who had just then come in to see him. I asked him to write a note, and he at once cheerfully sat down to do so. The result is appended. (No. 6.) There is also a memo. of what he wished to have for tiffin (No. 7), and dinner, and an order that was to be sent to his wine merchant. (No. 8.) His skin and head were cool; pulse 84; bowels open: much less of the peculiar odour first noticed in his breath. Altogether, he looks much better and stronger; is cheerful; and walks with a less stooping gait. To-day I ordered a quinine mixture with tinct. nucis vomicæ.

The blister on the neck is still open. He takes a generous diet, and one pint of claret daily. On the evening of the 18th he was evidently better. He had written an order to his wine merchant, and some other notes. He read several lines with few mistakes; he seems much interested in doing this, but soon gets tired, and then he becomes quite unintelligible.

June 14th.—He is better this morning: pulse 80; has slept well; no heat of head or body; reads very well, miscalling only a few words. Talked quite naturally about many things, and especially about his illness; remembered being taken ill, but could not describe his sensation; remembered people also who came to see him, and the days on which they came, but could not always remember their names; even whilst talking he forgets words, or substitutes others of a similiar sound; at the same time he appears conscious of his defect of memory. He wrote a note (copy appended, No. 9), to a friend; he remembered his name, and appeared much amused that he did so. It had been stormy during the night, and this was evidently in his mind when he wrote; notwithstanding that he spoke so well, the wording of his written memo. No. 10 shows how far he still was from health. I should note that the handwriting from the beginning has been almost as steady and firm as when in his usual health. Dr. C—— saw him again with me to-day. He read and wrote for us; the reading had few mistakes, those mostly at the end of the sentences; the writing not nearly equal to the reading. He talked quite naturally on many subjects, and his general aspect was that of great improvement.

June 15th.—He seems to be doing well. He read a telegram in the paper, and commented fairly on it, but made several mistakes in his words; read part of a book equally well, and wrote memos. (No. 11-12) about his food; his writing falls far short of his reading or conversation. His physical health is good; bowels regular; pulse 80; temperature of body normal; his memory, in some respects, is not so good as it was a day or two ago: he could not to-day remember the names of common objects, such as a bell, a book, (the latter he called "bok"), a paper knife, or his intimate friend's name, but was quite sensible of his defect of memory, and smiled as he alluded to it. He takes his food well, and half a bottle of claret daily.

June 16th.—He is much the same, with memory, if anything, rather clearer. He reads with few mistakes, but his writing (No. 13), was not equal to his reading; he has a fair appetite, slept pretty well last night. It should be noted that during the last ten days rain has fallen, and that the atmosphere has been much cooler, which has been in his favor.

17th.—He is improving; had a good night; tongue clean; pulse 80; blister healed. He read an advertisement in the newspaper quite correctly, and spoke well, with occasional mistakes, of which he was quite conscious. I have cautioned his friends and the nurse against allowing him to sign or write cheques or letters.

18th.—He continues to improve and reads and writes (No. 14), better, forgetting fewer words. His physicial health is otherwise good.

19th.—He continues to improve; conversation perfectly natural; reading almost without a mistake; writing (Nos. 15-16), improved, but still not correct. An ordinary observer would now probably not notice any peculiarity in his conversation.

June 21st.—Doing well; speaks almost quite correctly. In reading he occasionally mispronounces a word, but seems aware that he has done so.

June 22nd.—He is doing well; speaks and reads correctly, or nearly so; writing (No. 17-18), improved, but still not perfect. [illegible]

June 23rd.—He is quite convalescent [illegible]. His conversation and reading are now nearly perfect. He occasionally forgets a substantive word for another. He [illegible]

signature, indeed, alone would not have betrayed any defect. But the notes themselves shew that, as Dr. Bastian would

No. 1. June 8th.

8th August.

No. 2. June 11th, 1868.

ludu—all bide—blessed, blesse tut.

Bless, bless.
Bless: 11, bless 11, blesse.
I'. B. B. B.

No. 3. June 12th, 8 a.m.
Wednesday.

No. 4. June 12th, 4 p.m.

I am better, he is better, but ill a ill my bill a better ill i bill

No. 6. June 13th.
It was bloying all the well, it was barring in bottle, it was

No. 7. June 13th.
Bacon. Eggs. Bagels. Spitipe Scink. Soups. Spitch Cock. Spinciple.

No. 9. June 14th.

No. 12. June 15th.

wine for me.

June 16th.

all the news.

Spitch Cock. Soup. Roast mutton.
Wine. Bordeaux.

Bordeaux.

We have ordered fish and omelet.
There is nothing ordered for tiffin, as nothing is yet settled.

No. 17. June 21st.

times. I have ordered some breakfast, but nothing yet for tiffin and dinner.

No. 18. June 22nd.

head at all. I have not heard what we are to have in tiffin or

I have recorded this case in detail, as it illustrates some points in the pathology of the disease that have been much discussed by recent observers. The symptoms were exactly those described by Trousseau and others; the loss of memory of words, even whilst the intelligence was comparatively good, was remarkably shewn during his recovery. The incapacity to write correctly whilst he was able to express himself almost clearly, was very illustrative of that phase of cerebral disease which has been termed "agraphia" by Dr. Bastian.

The convulsion on the right side, at the commencement of the disease, so far supports the views of Dr. M. Dax and others who localize the cause of the disease in the left cerebral hemisphere. Happily, the opportunity did not occur of ascertaining whether in this case the views subsequently promulgated by Drs. G. Dax and Broca, as to the precise localization of the lesion in the anterior and outer portion of the middle lobe of that hemisphere, near the island of Reil, and consequently close to the [illegible] recovery without paralysis, and the almost perfect restoration of the power of speech and writing seems, I think, to point to disturbance rather than functional structural change. Though the prematurely aged appearance, the rigid arteries, and other general indications of adipose and atheromatous degeneration suggest the possibility of disturbed cerebral circulation, and point, perhaps, to the middle cerebral artery as the seat of some transient interruption of circulation, or the temporary presence of a thrombus or embolon, whose origin is traceable to degenerate vessels. It is possible that congestion, or slight hæmorrhage, may have occurred from similar causes; and as the central ganglia were probably only slightly compressed. The symptoms, after the convulsion had passed, were confined to what was due to changes of a transient nature that had occurred in the left anterior central lobe.

It is possible that this may have been one of the protean forms assumed by cerebral exhaustion, the result of long residence in a tropical climate, exhaustive disease, and an overwrought brain; and that structural disease, in the conventional acceptation of the term, may have been absent, the pathological explanation being sought for rather in dynamical than material changes. In any case, it is impossible not to regard the future of one so affected with anxiety; and the chief practical lesson to be derived from such a case is the avoidance of a too protracted residence in a climate where we were not intended to live, as well as the early acceptance of those warnings which usually precede the breaking down of the vigor and force of the nerve centres generally, and the timely relaxation from oppressive mental work, as well as absence from the exhausting effects of a hot, damp, and

[illegible] ministration of drugs went, very little was needed. Rest, proper nourishment, and the absence of all excitement were the con- [illegible] increase in temperature suggested excitement of the circulation.

on which to withdraw the accustomed supply. A blister was applied to his neck, but I doubt if it was of any service, and I believe now he would have done just as well without it. I have strongly urged that he should never return to this country, and that his brain should not be overtaxed with work of any description.

CASE OF SYMPATHETIC ORCHITIS.

By K. M. L[illegible], A.M., M.D., L.R.C.S.E.

The following case, for the details of which I am indebted to Sub-Assistant Surgeon Bany Mahtab Tagore of this station, appears to me to demonstrate an important fact in surgical pathology. No other cause of the acute orchitis could be discovered than that suggested [illegible].

Nasura, aged 30, a Mahomedan, apparently in good health, was admitted into [illegible] on the 26th June, 1869. He was received into hospital on the 22nd July, for an abscess of the left mamma. This was opened and poulticed. Pus did not escape freely however, and on the 28th July, he became feverish, and his right testicle inflamed. The abscess was now more freely incised, and pus thoroughly evacuated. Leeches and fomentations were applied to the testicle. The fever subsided under antimonials and salines, the cavity of the abscess contracted and granulated, and the testicle, which had attained the size of a large mango, gradually regained its normal dimensions. The man denied having ever suffered from gonorrhœa, syphilis, or swelled testicles. He had no cicatrix on the penis, nor urethral discharge, and had not had the affected testicle injured in any way. Both conditions, mammary sinuses and orchitis, abated simultaneously, and he was discharged well on the 21st August. Having carefully eliminated every possible cause of the orchitis, I am compelled to the conclusion that it was caused or determined by the iritation of the mamma of the opposite side.

ANTAGONISTIC ACTION OF OPIUM TO BELLADONA.

SEVERAL instances and cases having recently been recorded in this journal of the action of belladonna in poisoning by opium, an authenticated occurrence of poisoning by belladonna, counteracted by opium, will be read with interest.

In the *Medical Press and Circular*, Dr. Bernard Kavanagh, Surgeon to the Limerick Infirmary, relates the following case, here given in a condensed form :—

A girl of 3¼ and a boy of 2½ years had eaten some extract of belladonna [illegible] with [illegible] day were seen [illegible] hour afterwards, and found laboring under frantic excitement, unconscious to every one and every thing around them ; their pupils dilated to the *utmost* extent, the entire skin as red as in scarlatina, and their pulses about 150. The girl had taken more than the boy, and her symptoms were the most severe. The stomach-pump was applied with good effect, and opium in tincture given both by mouth and enema, a few drops every hour. In about 12 hours both became gradually drowsy and fell asleep, waking nearly well. Dr. Kavanagh states :—"I have no doubt that these children took four times more of the belladonna than would have been sufficient to produce poisonous effects ; and when it is borne in mind, that at least 50 drops of the tincture were administered to the girl, and 30 to the boy, and that under other circumstances one would not like to be after giving a quarter that amount to children of their tender age, also its producing none of the effects of opiumism, together [illegible] there can be no further doubt of the fact that these substances are mutually antagonistic to each other."

CONTRIBUTIONS FROM THE MITFORD HOSPITAL, DACCA.

By [illegible], F.R.C.S.

[illegible] PRIMARY DISCHARGE OF PUS WITH [illegible] RAPID DEVELOPMENT AND SUBSIDENCE OF AN ILIO-CÆCAL [illegible]

[illegible]

He says that 14 days before admission (19th April), he was seized with [illegible]. He [illegible] local medical [illegible] [illegible] morning (20th April), the disturbance in the bowels had ceased, but he had pain about the bladder, and could not pass water. He then went to the hospital at Manickgunge, where he was told to apply a mustard plaister, and to take some medicine that was given to him. At midday [illegible] and got relief from his pain. Next day (21st April), his urine again stopped, and he went to the hospital, where a catheter was passed, and much urine drawn off, with relief to his pain. Blood came out after passing the catheter, the introduction of which caused him great pain. In the evening the catheter was again passed, blood and matter escaped, and afterwards urine. Three or four times a day, and two or three times a night, the catheter was continued to be passed up to the 3rd of May when he arrived at the Mitford hospital. He never passed a stone nor any gravel, and he does not know that he ever had any affection of the kidneys or bladder. He recollects that he had some pain about the small of the back for 4 days before he was attacked with his present illness, and his father and mother lived to old age, and died if fever. He has had only one brother, who is still alive. He cannot recollect ever having had any injury to his abdomen or loins. He had syphilis with a supuratory bubo 4 years ago, and was treated in the Mitford hospital. Has never had alopœcia or cutaneous eruptions of any kind.

On admission, the sub-assistant surgeon, Gopaul Chunder Pattuck, noted that the patient complained of severe pain over the bladder and around the anus, and complete stoppage of urine. The lower part of the patient's abdomen was tightly distended. His countenance was expressive of great suffering. He had fever, and his pulse 110. His tongue was covered throughout with a yellowish brown fur. The sub-assistant surgeon passed a No. 9 catheter through what he supposed to be a false passage into the bladder, and drew off a large quantity of offensive pus, mixed with urine and blood. The passing of the instrument caused great pain, but subsequently considerable relief was experienced. The following morning, (4th May), I saw him, and found him pretty much as the sub-assistant surgeon had described. There was no marked distension of the abdomen, which, however, in the vesical region was very tender. I could detect no tumour, though I made a very careful examination externally, and also by the rectum. He had passed, during the night, a little urine mixed with blood and pus. I now very carefully introduced along the urethra a No. 9 catheter, and found that it slid into what appeared to be a false passage about the neck of the bladder. A large quantity of pus escaped. The catheter seeming to be blocked up, I withdrew it, and having cleared it, again introduced it : and this time it passed on into the bladder, from which viscus, urine, and blood now flowed. I washed out the bladder with a little warm water, and ordered the man opium, hot fomentations and a hip bath. In the evening the catheter was again passed with similar results, and the bladder was again washed out. He then had sharp fever.

6th May.—Fever persists ; pulse 104 ; countenance expressive of great suffering ; complains of intense pain over the bladder and in the perineum in front of the anus. Perineum and rectum again examined, but no tumour or hardness was anywhere perceptible. With great difficulty he passed a little urine, mixed with a considerable quantity of pus and blood, three times in the night. The catheter was again passed, and a large quantity of pus escaped. His fever persisted through the day. Is now taking quinine gr.v and opii g.i every four hours.

8th.—Feels better ; pulse 88 ; temperature 95° ; bowels open twice during the night ; motions healthy ; no pain in the perineum, but still has great pain about the bladder when he passes water, which he does frequently. There is a perceptible diminution in the amount of pus ; catheter ceased to be passed ; is now taking alpalis with buchu., as well as quinine and opium.

9th.—Pulse 102 ; temperature 95° ; has frequently made water which still contains much pus ; now complains of pain in the right iliac region, where an ovoid, moveable, tender tumour, about the size and shape of a hen's egg, is felt in a situation pretty nearly corresponding to that of the appendex cœci.

[illegible] natural ; vesical distress diminished, though still severe ; pus in considerable quantity is passed with the urine. The iliac tumour has been enlarging in an oblique direction upwards and [illegible]



18th May.

ovoid in the diagram.

time, but followed by slight pain afterwards. The tumour is

12 p.m.

ing about the region of the right ureter in the right lumbar region; Has fever daily at 1 p.m., and at that time some pain in the tumour; is thin and feeble.

9th June.—There has been nothing particularly remarkable in He gets fever every day at about 1 or 2 p.m. This morning he has slight fever; seems to be losing flesh. There is a slight induration in the region of the old tumour, and this induration enlarges and becomes painful whenever fever comes on, urine free from pus and albumen.

imagined that his fever would cease to trouble him. On the 14th, at his own request, he was discharged.

News was subsequently brought to the hospital, that the poor

the Mitford hospital. Nothing more is known of his case.

I may just remark that I have not in my notes recorded the result of examination by percussion, simply because percussion at no time helped me in the very least degree towards the solution of the problem before me. Some part of a bowel floated here and there, and gave resonance without in any way declaring the relations which the tumour itself bore to surrounding viscera. When I first saw the man on the 3rd of May, my impression, after having heard the history of his case, was that he had had inflammation about the neck of the bladder, which had caused retention of urine, and had ended in abscess, into which the catheter, passed by the Native Doctor at the Manick-

examine the perineum and neck of the bladder by the rectum, I fully expected to find such indications as would enable me, at once, to cut deeply into the anterior perineal space, and relieve the tension which I imagined would be there existing. The finger could reach, no evidence of disease within the pelvis tained that the membranous portion of the urethra, close to the

on been again introduced, both pus and urine escaped. This pus must have come either from the interior of the bladder, or from a pelvic abscess situated higher up than my finger could reach from the rectum, and possibly communicating along the deep layer of pelvic fascia with the rent in the membranous portion of the urethra. If, from the bladder, it is possible that it may have got there from the ureter, and that the injury to the urethra was merely an accidental occurrence connected with catheterisation prior to admission. Obscure as is this case, it

of urine, torn urethra, the flow of pus through the catheter, and

of the most acute vesical suffering, and of a dis

its maximum size in five days, when it reached nearly to the

cord-like thickening along the course of the ureter, pus the while having first decreased in quantity, and then ceased

the history of this case from the right kidney and ureter, further complicated probably by inflammatory changes in the sub-peritoneal fascia on the right side. As the man eventually

---

ABSCESS IN THE CAVITY OF THE TUNICA VAGINALIS.

—— first consulted me on the 25th of March, 1869, on account of a

past his right testicle has been gradually increasing in size.

from a hydrocele, which the *Kobiraj* accordingly proceeded to

wood, coated with some escharotic, which ulcerated its way into the sac of the hydrocele, and allowed its contents to escape. The

which continued to flow for five months, when I was consulted.

The Baboo thinks that at the time the hydrocele was first

perhaps somewhat larger. In the centre of the anterior surface of the scrotal covering of the right testicle there were two ulcers, one immediately above the other. An ordinary probe introduced through these ulcers went straight backwards its full

the scrotum seemingly about the globus major of the epididymis. About this part there was a cavity, honey-combed and irregular, and from it poured out a horribly stinking fluid, composed in part of serous fluid and in part of pus. The scrotal coverings of the testicle were enormously thickened. The body of the testicle could not distinctly be made out. The epididymis could not be distinguished, but the vas deferens was distinct and free

about the indurated parts, and the ulcers were in an inflamed and irritable condition. Ordered bichloride of mercury and pot. iodidi in decoct. sennæ co. The scrotum to be strapped. The strapping reduced the swelling and the discharge very much, but eventually had to be left off on account of vesication of the scrotum. Later, the sac of the old hydrocele was injected

resulted. Subsequently, the strength of the injection was increased by one-half, and eventually was made twice as strong as the tincture of iodine of the British Pharmacopœia. The mixture was continued. By using the strong injection daily, steady contraction of the tumour resulted, and by the end of June the ulcer had closed, and the testicle had become resolved into a mass having a double outline, in all about the size of a turkey's egg.

very much marked by the great amount of inflammatory induration, which was general throughout the whole scrotum, of which the outlines of the component structures deeper than the skin could not be distinctly felt. It was clear, however, that the cord was free from enlargement, that there was no knobby or nodular feeling about the tumour, which was uniformly even and smooth, and that the present mischief had followed the inflammation of a hydrocelic cyst,

tional cachexia. Strapping reduced the swelling of the superficial parts, and injections of iodine steadily reduced the general mass, which however, at last, seemed obstinately disinclined to grow smaller. Convinced that the remains of an old indurated, thickened, inflamed and suppurating cyst formed the tumour, I pushed the use of iodine to the daily injection of a solution twice the strength of the tincture of iodide of the British Pharma-

under [illegible] treated.

The Indian Medical Gazette.

Acknowledgments.

Lancet.
American Journal of Medical Sciences (July.)
London Quarterly Journal of Medical Sciences (August.)
Dublin Medical Journal.
Calcutta Medical Journal (May and August.)
Medical Press and Circular.
Calcutta Medical Reporter.
Punjab Jail Report for 1868.
Calcutta Journal of Medicine (May and June.)
Calcutta Review (August.)

Notices to Correspondents.

Communications have been received from

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Sub-Assistant Surgeon A.S., A.S.†
DR. FAYRER, C.S.I.
Assistant-Surgeon H. C. CUTCLIFFE.
Surgeon W. J. MOORE.
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PROFESSOR PETENKOFFER'S THEORY OF CHOLERA.

THE extensive operations ordered by Government to note the alterations in the subsoil water all over India, show the importance attached to Professor Petenkoffer's theory of its influence in the propagation of cholera. We have hitherto had considerable difficulty in understanding the problem or theory propounded by the learned German Professor. That it coincided with many of the phenomena of the appearance and spread of the disease, the experience of India amply proved. The disease has appeared very regularly at certain seasons of the year, more especially among the European troops and in cantonments and jails, from which alone our reliable statistical information has been hitherto derived. The season of the year at which it appears in the Upper Provinces is the rainy season, when the subsoil water rises considerably towards the surface. In Bengal Proper there are two seasons: one before, and the other after the rainy season; the country during the rains being very much flooded, *or under water*. It was observed at Agra, that on four occasions the cholera appeared 20 days after the rains set in; and there have been innumerable instances of the progress of an epidemic being accelerated, or, on the contrary, being checked, after a heavy fall of rain. The apparent anomalies in its appearance in Bengal were explained by stating, that excess of water was incompatible with the development of the cholera germ. But there are other difficulties in explaining the progress of cholera by land and water, which appear opposed to the subsoil theory, and cause doubt regarding the understanding the strict definition of the Professor's theory. These doubts have now been cleared with mathematical precision by late articles which appeared in the *Lancet* during August and September. In them the data are laid down with precision under algebraical signs, *viz.*, $x.y.\&\ z.:x$. meaning the germ, seed, or ovum, of the cholera-poison. It is not capable of inducing the disease in a human body, till it has undergone a change or metamorphosis in y. which consists of a porous soil, containing a certain quantity of organic matter and water. It will be more clear in discussing this question to consider $y = \frac{y}{y}$; $\frac{y}{y}$ meaning a certain degree of moisture, and not comprehending flooded lands or dry deserts, and $\frac{y}{y}$ meaning a porous alluvial soil containing organic matter, and not comprehending rocky or clayey soils, dry buildings or rocky mountains, or ships not within a thousand miles of land. The change would take place in the medium y produces z, which, on entering the human body, induces the disease called cholera. Unless x pass through its change in y no active germ can be produced. In ordinary language, one person cannot catch cholera directly from the person or evacuation of a cholera patient. If the study of cholera were limited to Bengal, it would be very difficult to show the falsehood of Professor Petenkoffer's theory, as here the whole delta of the Ganges and Brahmapootra is water-logged, and the disease is endemic, at the mouth of the country without any marked distance, whilst the ... But let us examine the history of its progress over the world. Cholera has been endemic in Bengal from time immemorial. When it appeared in a very intense form in Russia in 1817, it was called a novel disease of the most malignant type. There had been severe attacks amongst the troops on the coast in 1790 and 1793, and there was a severe attack at Hurdwar in 1783, where the

to 25,000. The information collected on this occasion is important in reference to the influence of y, the subsoil moisture. [illegible] which communication was available, *viz.*, on foot, in carriages, by camels, or horses, and by the rail. It crossed cultivated and well-watered countries, mountains, and barren, sandy deserts, and was communicated by the pilgrims to the residents in each [illegible] more hot and dry in May. The average monthly rain-fall in the countries to which the main lines of road led, (with a population of 17,923,665), extending from Hurdwar to Mooltan westerly, south-west to Hissar, and south-east to Oudh, in April and May, was only 0·25 inches, and in the previous three months of the year only 0·52 inches. In the southern line of country, *viâ* Hissar and Sirsa, the subsoil water is indicated by the depth of the surface of the water in the wells, which varies from 100 to 300′. In the easterly line, it varies from 8′ to 90.′ In the Upper Provinces, the sub- [illegible] rainy season, from which period it subsides till the rains [illegible] thunder-storm, in the interval, with the exception that several good showers, amounting perhaps to an inch of water, may be expected about the end of the year. There is more rain along the foot of the Himalayas and in the northern part of the Punjab, but this description of the seasons applies to the part of the country that is the seat of cholera. The influence of any change in the subsoil water can have been but slight under these circumstances. All the country was dry, and much a bare, sandy desert, without a green blade of grass visible for hundreds of [illegible] have been wanting.

In the same report there are two instances of pilgrims or their clothes being washed in village tanks, and two days after the villages being severely attacked with cholera, which had not been present in one of these villages in the Punjab for 24 years. There are numerous instances on record in India of the disease [illegible] whilst those who used the water from other tanks escaped. The drinking water of towns in Europe has been contaminated with z, and it has been communicable by rivers into which cholera evacuations have been discharged from sewers. In these instances, the presence of $\frac{x}{y}$ is not apparent. The appearance of cholera on board-ship, some days after leaving land, is easily explained z was taken with them either in a dormant state in the person or clothes; but it no sooner becomes deve- [illegible] tion is required on this point. There are numerous instances in this country where the barracks or houses are built on rock, [illegible] severely. There are many instances of patients in hospital or [illegible] patients. There are many cases on record of men attending a funeral being affected, and of officers and clergymen attacked [illegible] personally experienced. The following is a most characteristic [illegible] given by one of the ablest non-contagionist writers on cholera, Dr. Jameson; but in those days the presence of collapse was considered essential to indicate the presence of the poison in [illegible] that of a gentleman who died after six hours' illness, the three medical men, who opened the body, were sensible of a peculiar offensive odour, very different from the ordinary smell of dead subjects, and all were for a day or two affected with vomiting, looseness, and other symptoms of disordered bowels." In this case y was certainly not present though x was palpable to the smell, and the action of z was clear and unmistakeable, though it did not extend to collapse. During the present year, the first case in the jail at Rajshahye was in a recently-admitted prisoner; the next two cases occurred in the adjacent sleeping places in the ward; and the third in a patient in hospital. Instances of attendants on cholera patients being affected have been recorded from the first appearance of the disease in India, and they are repeated after every severe epidemic. These people are on the surface of the earth which, doubtless, has a subsoil, but the [illegible] ful, as shewn in connection with the season of the year, which all experience shews materially to influence the prevalence of cholera; but at this season there are other influences than simple moisture, which require special attention, and which may have more influence than the presence of water.

Experience shews that moisture bears an important part in the development and activity of the cholera germ. It is also most probable, that the germ, seed, or ovum, may retain its [illegible] a year—possibly for years—certainly for days or weeks. There are many instances of sudden appearances of cholera after falls [illegible] drinking water and tanks and wells has been alluded to, but [illegible]

The simultaneous appearance of the disease with a fall of rain, too limited to reach or influence the level of the subsoil water, shows that the altered level of that water could not materially influence the result. The disease spreads in India during the dry hot winds, when $\frac{z}{y}$ is certainly absent, and during the hard frosts in Russia $\frac{z}{y}$ is not present.

This proves that the influence of subsoil water is not essential to the propagation of the germ, and it is probable that the [illegible] simply casual.

HEALTH OF THE CENTRAL PROVINCES.

IN reading over the valuable and interesting reports on the vital statistics and vaccine operations of the Central Provinces for 1868, we are struck by the amount of vigour and ability displayed in the measures initiated for the public health by Drs. C. J. Townsend and J. Brake, in their respective departments. For instance, the former officer had good reasons for concluding that the "fair formerly held annually in February at the Mahadeo Cave, in the Puchmurrie Hills, formed the most frequent focus of the disease (cholera) within the province. The stream of pilgrims is constant throughout the year; from 100,000, to 120,000 people assembled annually on the Deinwak River, in the valley below the hill. Cholera broke out in this fair in 1860 and in 1865, and the most wide-spread epidemics, of which there are any records, followed, not a single district having escaped in either year." Dr. Townsend continues: "the spread of the disease over the country in 1865 was so manifestly connected with the dispersion of the pilgrims from Mahadeo Fair, that to prevent its assemblage for the future appeared to be the measure most urgently called for. Orders prohibiting the fair were accordingly issued by Sir R. Temple, and the reasons for the measure were so obvious and good, that it was received by the mass of the people with ready acquiescence," and that, notwithstanding, the "cave is held in great sanctity through all the surrounding country."

It is certainly very refreshing to meet with an instance of this kind in India; common sense, and action, for once, in a matter of public health, taking the place of red tape, reports, and procrastination. We only wish we might reasonably hope that a similar policy would one of these days be put in force regarding the inhabitants of the Gangetic Valley, the focus, par-excellence, of Asiatic cholera, and to which subject we shall refer in our next number.

We find the same prompt and energetic spirit, as that above noticed, displayed by the authorities when cholera had become epidemic over the Central Provinces: no time was lost in twaddle about caste prejudices; there was no cry as to want of power or funds to enforce acts necessary for the public health; the officials then and there took upon themselves to obtain information as to the abode of those suffering from the disease, and they isolated the sick as far as practicable from their healthy neighbours; they destroyed contaminated articles of clothing, dug new wells, and guarded the old ones from pollution, enforced quarantine, and that, without waiting to dispute over the ways and means, but like men who felt the responsibility of their office, and having an interest in the work entrusted to them, they were able to throw their European energy and knowledge into the undertaking, being fortunately untrammelled by superior authority. The result is plainly set forth in the report before us, in a greatly diminished death-rate, from cholera during the epidemic of 1868, as compared with that of 1865 and 1860, exemplifying the truth of the old saying that "where there's a will there's a way."

With reference to Dr. Brake's vaccine report, although it shows evidence of much life and progress, 43,484 persons having been vaccinated, with a percentage of 79·34 successful cases, nevertheless, the Inspector-General of Vaccination in the Central Provinces evidently labours under the disadvantages common to all parts of India, medical and otherwise subordinate. Nor can we be surprised at the general failure of vaccination in this country, when we remember that Jenner, Ceely, Marson, and Seaton, in fact, all authorities on this branch of medical science, insist most strongly on the fact that vaccination, to be protective, must be most carefully performed; the lymph should be drawn from the arm of a healthy person, and above all, it must be taken before the appearance of the areola. In fact, as Dr. Seaton observes, it is by a "judicious choice of lymph, the taking it only from suitable subjects, from the finest vesicles, at the proper time," that we can hope to succeed with vaccination. To enforce these conditions, stringent laws have been passed in England, but small-pox has not as yet been stamped out of our island.

We can sympathise most sincerely in the distress evinced by Dr. Brake with regard to the failure of vaccination in some portions of the provinces committed to his care; his success, however, will naturally rouse him to increased exertions, and we doubt not into a more extended field of action.

We would suggest that in these vaccine returns, some further notice were taken of the re-vaccinations. We observe Dr. J. Harrison enters 1,180 persons as having been re-vaccinated in the Sumbulpore District, but the result of these operations do not appear in the return. Surely this important part of the subject has not been overlooked, for "the utility and necessity of re-vaccination do not stand on any speculative reasoning from the local phenomena it developes, but upon broad grounds of observation and experience." (Seaton.)

It would certainly be a source of great blessing to the people of Bengal, if civil surgeons were encouraged to take upon themselves the functions of the health officer of their respective districts, rather than be tied down, as is too often the case at present, to the sudder stations, as superintendents of the jail. We trust the day is not far distant when their power for good will be appreciated as regards public health, and that we may see civil surgeons marching from village to village during the cold season on their tour inspection, supervising the work performed by their vaccinators, attending to the water supply, and a hundred other matters connected with the well-being of the inhabitants of their respective districts, which are now wholly and absolutely neglected.

CHOLERA.

IN continuation of the remarks we made last month as to the progress of cholera in India, we have since received information to the following effect. On the 16th of September several deaths from cholera occurred in the city of Cabul. The fact was brought to the notice of the Ameer, together with the prevalence of the disease at Jellalabad. There has been a fresh outburst of cholera at Teheran and the adjoining villages.

By letters dated the 12th of October, we learn that cholera had extended from Peshawar, and become virulent at Kohat. As many of the garrison as could be spared had been ordered out of cantonments into camp, and it was hoped that at so advanced a season of the year the epidemic would not be of long duration. It did not last long, but in seven days three regiments were more than decimated.

In the meantime, the disease has spread from Umritsar to Moultan, probably by means of people travelling from the former to the latter place by railroad; from Moultan it has passed down the Indus to Sukkur, Kotree and Hyderabad, affecting the sea port town of Kurrachee, following, in fact, an

THE EXPERIMENTS ON SNAKE-POISON.

It would be difficult for an unbiassed witness to find in the simple records which Dr. Fayrer has published from time to time of the experiments which he has carried out for the purpose of testing the value of alleged remedies for snake-bite anything that could reasonably excite controversy in himself, or rouse the hostility of other observers. In common with his professional brethren, he has found that ordinarily, the bite of a venomous Indian snake in full vigour has been fatal in his hands. He has heard, too, of certain methods of cure having proved successful in the hands of others. He has recognised the several sources of fallacies, notably the difficulty of proving in most cases of recovery that a genuine poisoned wound has been received, and he has determined to set aside all possibility of error, at least on this special point, and to ascertain by trials on animals whether any real antidote has yet been brought forward. He has neither asserted nor denied anything *a priori*, and whether the alleged remedy has been an object of belief with a professional man or the nostrum of an itinerant snake-charmer, it has been treated by him with the same care and fairness; and the result is, that medical men have now definite and tangible facts to offer in reply to any one who may feel disposed to criticise the failure of their practice, or mischievously hint that if another course had been followed in a given case, a better result might have been looked for. This is a service to the profession which the profession alone can adequately appreciate. The facts are clearly [illegible] by the author in a few propositions with which our readers are already familiar. They need not be reproduced in this place.

We see with surprise therefore, that Dr. Halford, of Melbourne, experimenting on the poison of a different class of animals, and possessed with the belief that ammonia, injected into a vein, is a specific against the bite of Australian snakes, has allowed himself to use a contemptuous tone in commenting on Dr. Fayrer's results. In his eyes, it is evidently an unpardonable sin to demonstrate that an Indian snake-poison more resembles an Australian snake in the effects of its bite, than it does in the rest of its natural history. Instead of feeling indebted to Dr. Fayrer for devoting care and time to the examination of the remedy in a distant part of the world, as a fellow enquirer earnestly desirous of knowing the truth, he endeavours to throw discredit on his labours.

If it were worth while, it would be easy to shew from the [illegible] that Dr. Halford's treatment is regarded with as little confidence [illegible] Dr. Fayrer has had ample opportunities of treating the bites of both [illegible] a number of cases greatly in excess even of the pretensions of Dr. Halford; yet he pronounces, without qualification of any [illegible]

Dr. Halford informs the Australian public that ammonia introduced by the stomach has an intricate course to pursue, and many [illegible] to undergo, before it can reach the seat of the poison; and that hydrocyanic acid, the [illegible] prevents its absorption; therefore it must be injected into a vein. To do this a small puncture is made. At this point Dr. Halford has misgivings. Intelligent colonists might hear elsewhere that air getting into a vein was considered dangerous by medical men, so he [illegible] with a ready reply. "Should any one," he says, "enter by so minute a puncture, no harm will follow." This is a novelty without doubt. We hope his readers were not blinded by it into the perilous trust in their veins which the doctrine inculcates. This doctrine Dr. Halford puts forth with an imposing flourish of physiology. Quotation alone can do the passage full justice:—"The direct injection of caustic or liquid ammonia, mixed with two parts of water, avoiding the internal laboratory of stomach spleen, liver, and intestines, at once mixes with the blood, which sufficiently dilutes its caustic powers. Within 20 or 30 seconds of its introduction into a vein, it passes to every part of the structure of the body. Wherever the serpent's poison lurks, there the ammonia is, and by the end of one minute has twice made the circulation of the body. It has passed in as a caustic alkali, free to exert its marvellous influence upon the inspired oxygen, or even possibly upon the poison itself, but certainly upon its products. With such physical truths as guides, let us see the result of practice; and here I may state that all practice not based on physiology is old woman's avocation, and is fast passing out of date, at least in the old country. Far from the centre of knowledge it may still flourish, but '*delenda est Carthago.*'" This is a fair specimen of Dr. Halford's philosophy and logic. The physiology [illegible] that ammonia reaches the seat of poison more rapidly, and in a purer state when thrown directly into the blood than when swallowed; the rapidity few will dispute, the purity many; but if both points be admitted, the curative action remains as far from proof as ever. It derives no sort of confirmation from Dr. Halford's physiology, nor is there any logical connection that we can discover between the process and the result, unless it be first proved that ammonia is a direct chemical antidote to snake-poison. Illustrating his total want of [illegible] guarding against error, Dr. Halford makes no mention of such a doubt as this, and thus reduces his practice, even if successful, to the position of that empiricism which he so seeks to repudiate.

Dr. Fayrer, on the other hand, absolutely disproves that there is any direct antagonism between Indian snake-poison and ammonia, by mixing the two and inoculating dogs with the mixture, the only result being intensified poisonous action. The most, therefore, that can be said for Dr. Halford's position is, that he succeeds by a very hazardous process in waking his patient from the stupor and other results of nervous depression. We do him an injustice. In our crude vernacular [illegible] phraseology would carry no force with Dr. Halford's lay pupils. "Quite sufficient was it for me," he writes in comment on a contributed case in which sluggish pupils became active under ammonia, "when reading the Doctor's letter, to know that the [illegible]

being, and that the nerve cells, instead of being dead to those vibrations whose reception constitutes light and sound, now responded, and the man was once more, ammonia being added to his blood, in harmony with the forces which surrounded him. Animal life in abeyance or passing away was re-manifested or brought back." There was prudence in the sufficiency; for throughout Dr. Halford's proceedings there is not a trace of scientific forethought or care, while, if his physiology be followed to its logical conclusion, it must lead him to injecting all his remedies into his patient's veins, and relegating those who do not follow him to the category of old women.

Dr. Fayrer has made the bulk of his experiments on dogs, as did Dr. Halford, and he rather ridicules one or two of Dr. Fayrer's experiments with pigeons. "Any one," he says, "possessing the least physiological knowledge would hardly expect a pigeon to recover either from the bite of a cobra or after the injection of ammonia, by such delicate apparatus is the life of birds sustained." We do not see how the delicacy of the apparatus can affect the question, whether ammonia is or is not a counterpoise to snake-bite; if it does so affect it, the vitality of a healthy pigeon is at least as great as that of one of Dr. Halford's moribund dogs, which some by-standers considered to be actually dead when ammonia was used.

We cannot devote more space for the argument. We are willing to accept Dr. Halford's facts as far as they go, but we qualify them with information derived from other sources respecting the potency and treatment of snake-bites in Australia. We regret the derisive tone he adopts in speaking of the experiments in this country, because it prevents us meeting him in the broad field of scientific inquiry.

THE *Mofussilite* states in a recent issue:—

We hear from Le (Ladak) that Dr. Cayley's dispensary at that place is becoming a great success, and we think we may add a great source of benefit to the natives of Le. The monthly average attendance of seekers of medical relief is much in excess of one hundred. There is a small hospital for in-door patients, of whom, during August, eight were maintained. Vaccination is becoming popular among the people. In August, 370 persons were vaccinated. This appears to have been in Le itself, but in the out-districts and villages, Dr. Cayley had vaccinated a goodly number.

WE are glad to announce that the Government have granted an allowance of Rs. 30 a month, to Medical Officers in executive charge of the Jails in Bengal, to pay for a writer to assist them in their clerical work.

Every endeavour is to be made to enlist educated convicts to take the post; and failing this, the pay is to be taken from the profits of the labour of the Jails, before the amount is taken from revenue.

We hope in time to see the indulgence extended to the whole Presidency; but in the meantime the Officers in Bengal require the assistance in consequence of the amount of writing their superiors demand from them.

THE Medical Officers to whom annuities are granted from the Retiring Fund, on this date, are:—Sutherland, Macpherson, Kelly, Lay, Hathaway, Warneford, Allan and Muetter.

DR. CORNISH ON OPIUM AND IPECACUANHA IN DYSENTERY.

(Concluded from page 220.)

From S. HEWARD, Esq., Surgeon, to ANDREW BERRY, Esq., Acting Head Surgeon, Centre Division, and 3rd Member of the Medical Board, Fort St. George. Dated Wallahjabad, 15th June, 1807.

SIR,—In communicating to you some account of the great mortality which has lately taken place in H. M.'s 30th Regiment in this station, I have to observe that dysentery was the disease from which this chiefly happened, and as the like occurrence is commonly spoken of, on the deportation of troops, particularly to tropical countries, it becomes an object, to ascertain any probable part of the many causes which are found to be thus constant and uniform in their operation and effect.

I should here premise that the men of the regiment are mostly young, the greater part of them from 18 to 30 years of age. This being kept in view will explain to you in some measure the very aggravated form of the disease we have had to combat with, arising, generally speaking, from a habit highly disposed to inflammations, and this accompanied with such a degree of irritation, as have but in too many instances baffled our best efforts to subdue them.

The cause of the disease I would refer to an existing predisposition thereto in the European constitution, which exposure to the sun, transitions from heat to cold, and other changes which induce a suddenly checked perspiration, irregularity in, or change of diet, or intoxication from the common arrack of the bazars, will in most instances be found among the more obvious causes of the disease.

I do not believe the disease was in any instance propagated by contagion, but altogether generated and kept up from the men, the women, and children of the regiment being exposed to some of the above causes; for I ought to inform you that the women and children were equally victims to the disease, which in many among them went through a course as rapid and acute, as with the strongest men of the corps; and in some of the children, I am satisfied, the sun's influence alone brought on the complaint.*

From the increasing sickness which prevailed in the regiment during the month of March, it had been recommended by you, that the men should be confined to their barracks during the heat of the day.

This measure was put in force on the 31st of March, in which month the admissions had become unusually numerous, nearly all of them dysentery, attended with so great constitutional irritation, that it was *common to receive into the hospitals from 10 to 15 of such cases daily.*

The confinement of the men to their quarters was from the hour of 8 a.m. till 4 o'clock p.m., and is still continued. This was attended with such marked effects, that in about a fortnight after, the admissions not only became fewer in number, but, what was also observable, the disease, from being highly aggravated in its symptoms, became gradually less so, and from that period took on daily more and more the character of a common diarrhœa. Now as there was not during that time any change or alteration in the diet of the men, or deviation from the established discipline of the regiment, which appears to be guided by the rules best calculated to preserve health, I am disposed to attribute this mitigation in the symptoms of the disease to the confinement of the men to their barracks; and the regulation having been found of such benefit and importance to the soldier's welfare in this instance, I trust it may at no time be overlooked on the landing of a new regiment from Europe; for I am persuaded, had the plan been adopted on the arrival of the 30th Regiment at this station, much of that distress and suffering in the first place would have been avoided, and many subsequent deaths ultimately prevented.

It might be supposed that a disease so fatal in its tendency could never originate, without previously occasioning some clear and well-marked constitutional indisposition, but this is by no means uniformly the case; for, at times the attacks are so sudden and unlooked for, that the men are on guard, at parade, or in bed when taken ill, and then the first thing complained of is passing a large quantity of fluid blood, but unattended with either griping or tenesmus.

Most frequently, however, the disease comes on in the shape of

* I cannot feel quite so certain about the [illegible] Mr. Heward [illegible] at Wallahjabad, we [illegible] at the general prevalence of dysentery there 63 years ago.—W. R. C.

of little else but pure blood, sometimes mixed with a little slimy matter, or froth, with occasional severe gripes, and tenesmus. A ... cases where the greatest irritation prevails, the patient is often ... apprehension about him. In these more violent cases the course of the disease is not of long duration, and too frequently ... This leads directly to the use of local and general blood-letting, purgatives, opiates, warm baths, blisters, &c., and to the whole of that class of medicines whose operation is known to determine ... *I stand with my revered preceptor, and in these sentiments Mr. Peirse, the Surgeon of the South Regiment, warmly accords, in favor of the now prevailing remedy, though not* always successful, is still so in a very great proportion of the many cases in which I have now seen it employed.

In the exhibition of the medicine, two drachms and a half of the tincture, or from 10 to 12 grains of solid opium, will in general be sufficient ... I have ... grains of the common extract, though I understand some have much exceeded it. The operation of the opium appears obviously two-fold: first, by diminishing pain and irritation; and ... the surface of the body.

The first effect may in every case be observed, but the second, and most important, is less certainly produced, though it is ... I never, that the disease is entirely cut off.

In the combination of the ipecacuanha with the opium, this ... should be principally kept in view, and the quantity regulated, so as to occasion nausea; for this action ... the skin, which when once established is supported and kept ... the powers of the hot room.

... a burning skin, great thirst, short quick ... with other symptoms of ... the warm bath, as the ... perhaps, seldom be omitted. During the sweating process there will be little occasion to repeat the medicine oftener than once in 24 hours, as the flux, griping, or tenesmus seldom returns while the perspiration continues; but a recurrence of the above ... for repeating the medicine; though in this, the practitioner ... arise in the course of the disease, by circumstances only. During ... place at all. At other times I have seen the patient under the sweating operation of the opium, after a lapse of more than 24 ...

... of the ... I have ... I have ... I have

published by Messrs. Thacker, Spink and Co, of this city, and entitled "Cholera Maligna is a specific acute inflammation of the mucous tissue of the small intestines, by George Barnard, M.R.C.S.E; Staff Surgeon, Eastern Frontier Brigade, H. M.'s Indian Army." The author's scheme of the pathology of cholera is succinctly stated on the title page of his pamphlet. There is nothing novel or original in the view adopted. It was held by Jameson in 1820, by Broussais and his school 10 years later and put forward more recently by Dr. Chuckerbutty in the *Indian Annals of Medical Science*, No. XXII, page 61. We therefore look for originality in the proof or demonstration. Dr Chuckerbutty details and classifies the morbid appearances in sixty-three fatal cases, and we can sympathise with a theory resulting from a too exclusive attention to the morbid anatomy of the disease, and a too sparing consideration of its phenomena. Dr. Barnard does not give a single original observation in support of his theory, and moreover does Dr. Chuckerbutty the injustice of not acknowledging his previously recorded and almost identical opinion. His "proofs" consist of a few extracts from the writings of Alison, Watson, Hodgkin, and others, and we may look in vain for any reference to Parkes, Macpherson, Goodeve, Johnson, Murray, &c., who have made the phenomena of cholera a special study. He neither states nor attempts to rebut the arguments which may be adversely urged. He quotes Dr. Hodgkin, to show the difficulty of determining what "an inflammation of mucous tissue is, as distinguished from congestion, flux, desquammation, or simple excess of functional activity, and completely shirks the discussion of this, to him, fundamental question.

His thermometer experiment (which appears to us to have been a most unjustifiable one), proves nothing. It stands alone; and until a thermometer has been introduced "upwards and backwards" into the abdomen of a healthy subject, through a canula, there is nothing to compare it with. Besides, though excess of heat does accompany the inflammatory process, inflammation does not always accompany excess of heat. Dr. Barnard has still to demonstrate that the choleraic lesion is an inflammatory one, primarily and essentially. In some cases, no doubt, inflammatory action does occur, but this would appear to be exceptional and subsequent. The choleraic lesion is as specific as that of typhoid, dysentery, scarlatina, small-pox or erysipelas—a feature of the sequence of morbid events we call cholera, and as much reason might be urged in favour of considering the specific lesion of these and other diseases as the essential and central feature of the morbid sequence, as in the case of cholera—perhaps more. The term specific is a mere sound if it does not mean a lesion peculiar to the particular disease; and there is nothing new or startling in announcing that *the* lesion of cholera is specific. How does Dr. Barnard's theory explain cases, many and well authenticated, in which the specific lesion is slight or absent? He also fails to demonstrate the relation between the intensity of the lesion and the severity of the disease, which ought to obtain if the lesion is the essential cause and substratum of the phenomena. We may also look in vain for any serious or systematic attempt to explain the symptoms and other *post-mortem* appearances of cholera, or to compare the choleraic lesion with inflammatory processes, simple or specific, elsewhere or otherwise caused.

The toxic theory of cholera will maintain its ground until a better is discovered, and, however dogmatically a stale, *effete* and incomplete doctrine is again propounded, strength of asseveration will hardly compensate for its intrinsic weakness or deficient demonstration. We would remind Dr. Barnard in passing, that the villi are not secreting organs, and that he has quite overlooked the state of the follicles in early stages of cholera as described by Parkes and others.

If the pathology of our author is second hand and eminently crude, his therapeutics are positively dangerous. He gives antimony to the amount of one grain, repeated every quarter of an hour until reaction occurs. His therapeutical theory is ostensibly antiphlogistic, but in reality the contra stimulant theory of Marryat, Rasori, and others; both weighed in the scales of experience, and found wanting. His practice is not novel; but he does not give the results of the previous trials of antimony in India, and specially in France. His own experience consists of 28 cases and 10 deaths—35 per cent—a result which falls well within the fluctuation of the cholera death-rate, namely 10 to 70 or 80 per cent. On the faith of this success (?) he threatens any practitioner who in future fails to adopt his practice with criminal prosecution!! The arrogance and folly of a statement of this sort preclude comment, as the fluctuation of the mortality of cholera is as the ordinary rate (page 12, Appendix) of capel censure. The cases are very vaguely reported; and in four of them secondary effects, after reaction, fairly attributable to antimony, occurred. (Case II, V, and two of Dr. Reed's p. 25 and 27, Appendix.) Dr. Barnard seems to be unaware, that in the collapsed stage of cholera absorption is in abeyance, and that fact, with the continuance of vomiting and purging, would explain the immunity from serious consequences, which happily obtained in most of his cases. When a patient can take 580 grains of calomel without ptyalism, 55 drops of croton oil without enteritis, 33 grains of opium without narcotism, and 22 grains of extract of belladonna without dilatation of pupils (Macpherson's Cholera in its Home, page 93), we cannot be surprised that 2 or 3 drachms of tartar emetic falls in every case to do much harm. Dr. Taylor details cases in which 3 to 10 grains of tartar emetic caused death; and we can only explain the *tolerance* of 30 to 180 grains by the abeyance of absorption, and the persistence of vomiting and purging. There seems in cholera to be an equal tolerance of croton oil, opium, strychnia, and belladonna.

Dr. Barnard's sanitary doctrines are obtained from Moses and Moule, and are, if not very feasible, at any rate very plain, and repeated *usque ad nauseam*. He gives a lively sketch of a model city and camp, and disposes of Petenkoffer in a sentence or two.

We would strongly recommend him, if he must write, to turn to some other subject, where intuition may supply the place of induction; and we would suggest to him to study this saying of Bacon's as a motto or text for his next essay:—"If a man will begin with certainties, he shall end in doubt; but if he will be content to begin with doubts, he shall end in certainties."

Local Correspondence.

THE WANT OF SURGICAL MECHANICIANS IN INDIA.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—Will you allow me, through the medium of your journal, to invite the attention of surgeons in India to our want of mechanical contrivances or appliances for the relief of physical deformities, resulting either from diseases or the operations which they necessitate. This want may, very probably, not be much felt in Calcutta, and I therefore trust that the distinguished professors of our Metropolitan College will pardon me for venturing publicly to write on a subject with which some experience, as a surgeon in the mofussil, has made me painfully familiar.

If we take the annual returns of the operations performed at the different dispensaries in the North-Western Provinces, for example, we shall find that a large number of amputations of limbs are annually performed, and a large number of lives thereby yearly saved. But ought we, as surgeons, to rest satisfied with the salvation of life at the cost of a limb? Is it not extremely painful to us to see the poor wretches whose legs or thighs we have mutilated, either condemned to crawl along the ground, or to hop on one leg, or to hobble along by the aid of a stick which has a cross bar placed at a right angle for the bent knee to rest on, and which rude and cumbrous representative of an artificial limb needs the assistance of both the arms of the patient for him to use it at all? Surgeons, here and there, I know, have constructed artificial limbs for their patients, but I speak only within my own knowledge, when I say that, though I have seen a large number at the poor-house native dispensaries who had undergone amputations, I have never seen one with a properly adapted artificial limb. Practically, according to my experience, amputation below the knee joint condemns the native to a slow and laborious progression by kneeling on the stick to which I have before alluded. Amputation through the thigh restricts the patient to hopping on one leg; and after amputation, through the arm or fore-arm, I have not seen anything done with a view to improve the usefulness of the imperfect member. Most of us who have had charge of native dispensaries or hospitals must remember the difficulties which we have had to encounter in order to get even a rightly shaped, or an interrupted splint, a swing cradle, a properly fitting truss with a suitable spring, a [illegible] fit for what we wanted of them, a knife that would [illegible] upon a convex glass

gineers and others. Why, then, should they not have workmen

appliances for distortions of the spine and of the feet, splints, crutches and cutlery; and competent also to manufacture a

vinces will, I trust, forgive me for thus alluding to his Provinces. Indeed, by one who is himself ever seeking opportunities to

ciating my professional views with that part of the country in which my professional experience has been chiefly gained.

Should it appear to other medical officers, as it does to me, that it would be a great blessing to our patients, and a boon to surgery, if we could develop the mechanicians' art in connexion

no doubt, ere long, assume a more complete form than in my haste I have given it, and will in due course be brought forward

Dacca. H. C. CUTCLIFFE, F.R.C.S.

THE FURLOUGH RULES AND THE MEDICAL SERVICE.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—I ... afterwards referred to, clearly appreciated the real injury thereby inflicted on the Medical Service: otherwise I do not think the said orders would have appeared in the *Gazette*. If I mistake not, the Indian Medical Service has hitherto been re... Rules and other vital points, to precisely the same treatment. Certainly, the Furlough Regulations of 1796 and 1854 were equally applicable to both classes; the advantages equally available to all. And so, indeed, was it intended the rules of 1868 should apply. This is plainly evident from para. 34, which reads,—"officers of the Indian Military and Medical Services will be required generally to notify their intention to accept these rules on the first occasion of their taking furlough." ... medical charges are not considered appointments in the sense ... Government, to the effect that an officer in charge of a civil ... para. 2), that leave taken under the rules now prescribed will *not* involve forfeiture of appointment, and (*vide* para 5), that officers drawing staff pay in addition to pay of rank, proceeding ... civil employ, are ruthlessly denied to the Medical Service. And ... vital interests, it certainly does appear that some reason for the demand should be assigned. I feel quite sure, that in loyalty, in ... depriving the Medical Service of the principal advantages of the ... is little doubt, uncomplaining acquiescence would be rendered. But in the total absence of any such reasons, bearing the vital ...

As mentioned previously, I can scarcely imagine the autho... flicted on our Service. Accordingly, as the orders at present stand, ... or sick leave, not only loses his right to return to his regiment, ... rule, as the civil medical officer has no claim to retain his appointment, he has no lien on half the allowances, which, of course, will reduce his pay to the half of the unemployed scale *enjoyed* by the *confrère* deprived of his regiment!

But this does not represent the pecuniary loss *in toto*. Many ... such as the house they live in. Not now being permitted to return to the appointment previously held, every thing must be sold, and re-purchase takes place on again entering on Indian Service. Even if done leisurely, pecuniary loss is almost certain. In the case of medical officers suddenly leaving on account of sickness, and so obliged to sell off at once, the popular phrase "alarming sacrifice," scarcely expresses the ruination which must so threaten many.

Again, consider the case of a medical officer who has worked and waited for years for some civil appointment. At length he is rewarded by obtaining the coveted post. But he falls sick, and is obliged to visit Europe. He therefore loses the position ... afresh.

I ... it is ... to the Civil Service Furlough Rules of 1868, that a civil servant taking furlough vacates his appointment. But I beg to submit that this cannot be advanced as a reason for singling the Medical from all Military ... of the application of the ... the Civil Service. If this be just, it would be equally right to apply *all* the rules of the Civil Service to the medical officers. ... less, the whole military body would gladly participate in the loaves and fishes and disadvantages of the Civil Service; would exchange rules, furlough, pay, pension, with considerable alacrity. But the application of the most disadvantageous clause of the Civil Service Furlough Rules, to one class of military officers alone—*viz.*, medical officers in civil employ—is a procedure which, in the absence of any just reason, I for one must ... the highest authorities.

In the order previously quoted, No. 660 of 1869, ruling a medical officer has no claim to return to a civil appointment, it is stated, that he may retain a lien on some appointment of equal emolument. But we all know the value of any such guarantee. Even if acted up to in spirit and letter, whenever opportunity of doing so presented, it is clear that no Government or administration would always have the opportunity. Medical officers holding appointments could not, I presume, be removed to make room for others returning from Europe with a "claim" to an appointment of equal emolument to the one they held before proceeding on furlough. For a first-class civil station, a man with a "claim" might wait years. For first-class civil surgeoncies are few and far between. The *para.* therefore of the order, stating that the medical officer, not permitted to retain his appointment, shall retain a lien on one of equal value, is not worth the paper on which it is printed!

Right and justice generally prevail in the end. The invidious ... the two principal advantages of the Furlough Rules—is an exception to the rule of right and justice prevailing, and as such im...

I am, Sir, Yours faithfully, SCRUTATOR.

September, 1869.

Irish Correspondence.

Dublin, September 17th, 1869.

The past three months have been rather uneventful, for though July was, as usual, distinguished by the meetings of what may be called respectively the Privy Council and the Parliament of the medical profession in the three kingdoms,—the Medical Council and the British Medical Association,—yet little of special interest has occurred in Dublin; and the great meetings alluded to have been fully reported already in the home periodicals, and in any case are hardly within the province of a "local" correspondent. The discussion on "hospitalism" in its relation to puerperal fever, which was still pending when I closed my last letter, was concluded on July 10th, when Dr. Evory Kennedy read an elaborate answer (occupying three hours in its delivery), to the objections which had been raised to his views. His answer was far too comprehensive to allow of my giving an abstract of it; but the gist of his arguments was that his opponents differed so among themselves as to refute one another, some of them accepting certain of his propositions which others denied; and that by admitting, as they all did, the contagious nature of metria, they necessarily accepted as true 12 out of his 13 propositions.

On the 30th July, at the meeting of the British Medical Association at Leeds, Dr Kennedy read another paper on this subject, in the section of state medicine. An interesting essay on hospital construction had been read on the previous day in the general meeting, by Captain Galton, C.B., and an animated discussion was called forth by these two papers. One of the "conservative" speakers gravely urged, as an argument against "too great ventilation," that "nurses said that, if they had the chance, patients would shut the windows." No doubt; and "if they had the chance, many of them would get drunk, but that is no argument for the abuse of alcohol. Some of the speakers objected to the building of *Handsome* hospitals, on the ground that an ugly building, when it became unhealthy, would be demolished when a handsome one would be spared. Those who know the Medical College Hospital in Calcutta will feel the force of this argument. This question of hospital construction has been raised opportunely enough; for recent legislation has placed in the hands of Government considerable revenues, which are to be devoted wholly to "the relief of suffering" in Ireland; and it is most probable that one use to which these funds will be put will be the re-building or enlarging of the county Infirmaries.

On the 22nd June, at the meeting of the Statistical and Social Inquiry Society, Dr. E D. Mapother read a paper on "Dublin hospitals, their grants, and governing bodies," which provoked a discussion almost as warm, while it lasted, as that which followed the reading of Dr. Evory Kennedy's paper. Dr Mapother's object was to expose the present system by which the appointment of the medical officers to several of the Dublin hospitals is regulated by nepotism or party spirit, while in several others the offices of physician and surgeon are attainable by purchase. It might have been supposed that nothing could be said in defence of this state of matters, and that attention only needed to be called to it to ensure its abolition. Nevertheless, the discussion which followed the reading of Dr. Mapother's paper lasted through two evenings, and the purchase system was defended by many speakers who, like Sir D. Corrigan, must be considered as unbiassed by pecuniary considerations. A reform, however, is inevitable, and I believe that it is being already carried out in some at least of the hospitals where the purchase system hitherto prevailed.

After some opposition, the "Medical Officers' Superannuation (Ireland) Bill" has at length become law. It merely extends to the hard-worked "dispensary doctors," the privilege which all other officials under the poor law authorities have long enjoyed, of receiving a pension when past their labour. The Bill lays down no fixed scale of retiring allowances, but merely permits the Guardians "to grant such pensions when they may see fit (subject to the approval of the Poor Law Commissioners), to medical officers, although the latter may not have devoted their entire time to the duties of their offices." They are paid by the Guardians. It was on the ground that their entire time was not occupied by these duties, that medical officers have hitherto been excluded from the privilege of receiving pensions when worked for as [illegible] Parliamentary Bills have proved, since that [illegible] poor rates; thus making it the interest of the rate-payers to retain old medical officers on full pay as long as possible.

The (Protestant) Arch-Deacon of Raphoe has addressed an able letter to one of the Dublin newspapers, recommending that the revenues which will be placed at the disposal of Government by the "Irish Church Bill" should be devoted to providing salaries for medical officers. No better application of the revenues of the Church could be devised; and the only weak point in the Venerable Arch-Deacon's letter is the fact that he is influenced, not only by a wish to benefit the hard-worked and ill-paid "dispensary doctors," but also by his anxiety to prevent the clergy of other denominations from benefitting, directly or indirectly, from the funds in question.

Dr. E. Percival Wright has been appointed Professor of Botany in the University of Dublin, and the Chair of Zoology thus vacated by him has been filled by Mr. A. Macalister.

On the 4th August, two workmen lost their lives in a sewer here, in consequence of inhaling sulphuretted hydrogen, which is believed to have been set free by the acid sewage from some chemical works acting on the "lime refuse" from the gas works. That such an accident should have occurred is most discreditable to the corporation, in whose hands the gas works now are; especially as by substituting oxide of iron for lime in the purification of the gas, as recommended by Drs. Mapother and Cameron, all risk might have been avoided.

Attention has been called, by a writer in one of the Dublin papers, to the dilapidated state of several ancient monuments which stand *outside* the Chapel of Trinity College, and among which is that of the celebrated Dr. John Stearne, the Founder and first President of the Dublin College of Physicians, who died in 1669. The writer suggests that a subscription should be raised among the practitioners of Dublin for the purpose of having Stearne's monument (which does not now stand in, or near its orginal site, which was in the old chapel, demolished nearly a century ago), repaired and placed either *inside* Trinity College Chapel or in the hall of the College of Physicians. When will the medical practitioners of Calcutta exert themselves to take a similar step with William Hamilton's monument, which still stands, neglected and almost unknown, in Job Charnock's venerable mausoleum at St. John's?

Golandaz.

Extracts.

On Absorption by Wounds.—M. Demarquay *(in the Union Medicale)* terminates an account of his investigations on this subject with the following conclusions:—

"1.—It results from my researches that a substance soluble in water, as iodide of potassium, is very rapidly carried into the torrent of the circulation, and eliminated by the saliva when it is applied to a large surface of denuded dermis. In such cases elimination takes place in from four to six or eight minutes. 2.—This same substance placed in the vesicity of a blister penetrates into the economy far less readily, by reason of the albuminous layer which covers the dermis, absorption not taking place then until nine, ten, fifteen, or twenty-six minutes. 3.—A solution of the iodide injected into the cellular tissue is absorbed and eliminated by the saliva in a period of time varying from ten to twenty minutes. 4.—The same solution applied to a recent wound is exhibited in the saliva in from one hour and a half to nineteen and fifteen minutes. 5.—When the wound has become "perfectly organized" it possesses great power of absorption. At the end of ten, eight, six, four minutes, or even less, evident traces of iodine are found in the saliva. In the face of such a power of absorption, we may ask whether the septic element which gives rise to erysipelas and puerperal fever may not have been absorbed by the wound itself? 6.—In that serious complication of wounds known under the name of "purulent infection," ought we not to inquire whether this power of absorption, so little established up to the present time, does not play a considerable part, and explain some of the [illegible] generally referred to phlebitis? 7.—Iodine injections thrown into abscesses, active or passive, or into encysted cavities, whether inflamed or not, are rapidly absorbed. I have proved that [illegible] by the saliva takes place in a period of time varying from forty-five to three minutes. 8.—When such [illegible] are employed in large quantities, or are too often repeated, the [illegible] than constantly observed [illegible]

[illegible] —[illegible] [illegible] [illegible] [

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON ON THE BLOOD OF ANIMALS.

Present:—Drs. Fayrer, Cunningham, and Mr. Sceva.—September 18th, 1869.

Experiment No. 1.—A dog was bitten in the fore-foot by a spectacled cobra. The snake struck the dog in the foot, and held on for a moment, at 3-27 p.m. The snake had been some weeks in captivity and had bitten before. 3-30.—The dog wildly excited, whining and licking the bitten part, which is bleeding and swollen; keeps turning round and round; sitting down and rising again in an excited manner; breathing very much accelerated. 3-40.—Licking the wound in sitting posture, and is trembling all over. 3-47.—Staggering. 3-50.—In convulsions. 3-55.—Dead—in 28 minutes.

Body examined at 4 p.m.—Lungs not congested; cavities of the heart filled with dark blood, which reddened and coagulated firmly, directly it was removed: part was already coagulated. At 4-15, no rigor mortis.

Mr. Sceva reports that a little stiffness of the limbs had taken place at ten minutes to five, or in about an hour after death.

Experiment No. 2.—A pariah dog was bitten by the daboia that had been in confinement since December, 1868, and during that period had never taken food or water. It had been some weeks unused, and when taken out of the box was very active and vicious; it seemed in good health and condition. Its jaws were closed on the dog's thigh at 3-27 p.m. At 3-28, the dog was partially paralysed; it made no noise, seemed to feel no pain; tried to move away a few paces with a staggering gait; the bitten limb almost useless; head drooping to the ground. 3-40.—Is unable to stand; limbs extended, perfectly paralysed; breathing deeply. 3-41.—Convulsive rigidity of the limbs.—3-44.—Dead—in 7 minutes.

The poison appears to have been very active in this instance, notwithstanding the condition of the snake. Paralysis of the nerve centres seemed to follow immediately after the bite; there was no sign of pain, and the dog was unconscious almost immediately.

Body examined at 3-55.—Lungs not congested. Cardiac cavities filled with fluid blood. The blood was perfectly fluid, both in the heart and great vessels, and remained so; no attempt at coagulation occurred. The contrast with the blood of the dog killed by the cobra was very remarkable, it formed at once a firm clot. At 4-15 p.m., there was no rigor mortis.

Mr. Sceva reports that at ten minutes to five, or in rather more than an hour after death, no rigor mortis had taken place.

Experiment No. 3.—A fowl was bitten by the same daboia in the thigh at 3-49. When placed on the ground it ran a few steps, limping on the bitten leg. In 30 seconds it fell over in violent convulsions; in 20 seconds more—50 altogether—it was dead.

The blood of this fowl remained perfectly fluid after death.

Experiment No. 4.—A fowl was bitten by a small cobra (teturiah keauteah), not fresh, in the thigh at 4-8 p.m. When placed on the ground it ran about, limping on the bitten leg. 4-9.—Feathers drooping; crouching; rises and tries to run; its wings droop to the ground. 4-10.—Head falling over, beak resting on the ground, comb and wattles becoming livid. 4-11.—Nearly paralysed, point of beak resting on the ground to support the head; cannot rise. 4-18.—Violently convulsed. This continued at intervals until the fowl died at 4-23. Dead—in 15 minutes. On opening the body, the blood was found to form a firm coagulum.

The object of these experiments was to compare again the effects of the daboia and cobra-poison on the blood. They clearly prove that after death from the viper's poison, however quickly it may be caused, the blood remains permanently fluid; whereas that the cobra-poison does not destroy its coagulability. The nature of the change thus wrought on the blood, I know not at present in its chemical bearings, but I believe it to be effected through the nerve centres affecting the vitality of the blood, not by a direct chemical action. There certainly are differences in the symptoms caused in the bitten animals, but they equally point to direct action on the nerve centres, as the cause of death. I have seen as much difference between the effects produced on the cobra by different daboias, by the same daboia on different animals of the same species, as in those that had been bitten by the cobra; and, on the other hand, similar differences in the bite of different cobras, or of the same cobra on different animals of the same species. In point of deadliness, they are, when fresh and vigorous, about equal; but I think that the first effects of the poison are most rapidly shewn in the daboia-bite.

Dr. Cunningham, of the Bengal Medical Service, who is on special duty investigating the subject of cholera, and who has a microscope with high powers, has very kindly undertaken to make a most careful microscopical examination of the blood of these animals; I append his report.

General Hospital; Friday, 24th September, 1869.

My Dear Dr. Fayrer,—Along with this I send you the drawings of the dog's and fowl's blood, which I got last Saturday. The specimens were examined, and the drawings (of which these are copies), were made on Sunday morning. In no case were any bodies seen corresponding with Halford's cells.

The blood of the cobra bitten was, at the time of examination, in a firm dark clot.

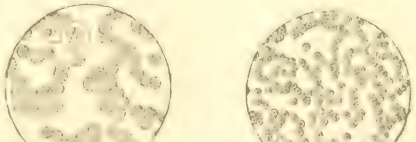
Beyond the ordinary constituents of the blood nothing could be seen, even under a power of nearly 1,100 diameters.

The blood of the dog bitten by the viper differed from the other. 1st.—In being entirely fluid. 2nd.—In being of a much lighter red colour. 3rd.—In containing numerous blood crystals. 4th.—In containing a good many large and active specimens of Bacteria.

The fowl's blood was in both cases very much broken up and decomposed, few entire red corpuscles remaining. This state of decomposition was most marked in the blood of that which was bitten by the viper. In both specimens were a few of the circular cells, which occur in fowl's blood under ordinary circumstances.

With many thanks for the opportunity which you have given me of examining the blood.—I am, &c.,

D. Douglas Cunningham.



1. 2 Cobra—Dog.



EXPERIMENT ON THE ACTION OF SNAKE POISON WHEN APPLIED TO THE SURFACE OF THE CONJUNCTIVA, AND ALSO ON THE INFLUENCE OF BAUDELOCQUE IN THE TREATMENT OF SNAKE POISONING.

[illegible]—Dr. FAYRER and Mr. SCEVA.—September 25th, 1869.

EXPERIMENT No. 1.—A dog was bitten in the thigh by a [illegible] at 4-3 p.m.

At 4-4 p.m., thirty drops of [illegible], diluted with water, were poured into the dog's mouth. The dog was much excited, and ran round snapping at the cobra, which was already very much paralysed. 4-5.—Another dose of thirty drops administered. Dog has partially paralysed leg, as he walks. 4-8.—Another dose of thirty drops administered. 4-9.—The dog staggers as he walks; frothing at the mouth; looks much depressed. 4-12.—Lies down; retching. 4-13.—Convulsed; another dose administered. He lies paralysed, and cannot [illegible] the head; no respiratory movements. 4-14.—Convulsive gasping. 4-15.—Dead—in 13 minutes. Two hours after death the rigor mortis was complete.

"I fear the case de Lux must be classed with other 6 antidotes."

EXPERIMENT No. 2.—[illegible] taken from [illegible] (a cobra), and a drop inserted between the lids of a fowl's [illegible] at 4-20 p.m. The eye soon [illegible].

4-25.—The eyelids [illegible]. 4-37.—Slightly swollen, and the eye [illegible]. 4-38.—No constitutional [illegible] of the poison. Another drop inserted; conjunctiva deeply injected and chemosed. 5 p.m.—The fowl [illegible], but is easily roused; it seems slightly affected by the poison. 5-10.—Crouching. 9 p.m.—Is drowsy; crouching, with wings drooping, and the point of the beak resting on the ground.

29th September, 7 a.m.—Lying on the ground with one wing extended; unable to walk. 1-30 p.m.—Lying down on one side; gasping; on being roused staggers and falls down. Has spasmodic movements; shivering; feathers ruffled. 6-9 p.m.—In the same state. 6 a.m.—Lying on one side, with the legs extended; frequent defecation. 9 a.m.—Appears to be improving; able to crouch on its feet. 4 p.m.—Is much better; [illegible] and water. 9 p.m.—Still improving.

28th September, 6 a.m.—Sits naturally on its feet; eats well; the swelling of the eye much reduced; is able to stand, but cannot walk much; the legs appear less benumbed, or to have [illegible] sleeps in an awkward manner. 7 p.m.—The bird seems to have recovered.

The fowl had a very narrow escape; it clearly proves that the poison acts by absorption through the conjunctiva.

EXPERIMENT No. 3.—A drop of fresh cobra-poison was put [illegible] at 4-27 p.m. The [illegible] was immediately profuse; rubs the eye with his fore-paw.

4-30.—Conjunctiva much injected; he is very uneasy, rubbing the eye with his foot. 4-38.—Lies curled up with his head between his fore-legs. Another drop inserted into the same eye. 4-40.—Appears sluggish, but is not constitutionally affected beyond this. 5 p.m.—Feeding is [illegible]; lies with his head between the legs; eyelids and conjunctiva intensely swollen. 5-10.—No change. 9 p.m.—Eyelids closed, and greatly swollen.

29th September, 7 a.m.—Appears lively and free from pain; swelling of the eyelids much reduced.

27th. 9 a.m.—Eats well, and does not appear to suffer any pain. 9 p.m.—The same.

28th. 9 p.m.—Eyelids slightly swollen. 7 p.m.—Nearly recovered.

It is to be noted, that although most flagrant inflammation was excited in the eye, it had not, as in the ordinary form of conjunctivitis, a tendency to suppurate. The eye, although temporarily damaged, the cornea being rendered opaque, was not destroyed, as is so frequently the case in the specific form of [illegible].

This experiment, like the last, proves that the poison is not only absorbed through the conjunctiva, but that it is a local irritant. The inflammation is intense, but it subsides without [illegible]; and although the cornea is rendered opaque with cloudy opacity, it would evidently soon recover. It seems quite clear from these experiments, that the notion that the poison is not operative, unless introduced directly into the blood, is not tenable, and that it is capable of endosmosis.

The following incident is interesting, as it shows how one may be mistaken about a snake-bite, although the evidence of its [illegible] seems complete:—

A short time ago, my friend Dr.——wrote to me, saying that a person had been to him, to inform him that he had been [illegible] by a cobra, and that he had prevented any ill effects by the timely use of measures known to himself. He offered to bring the sufferer, with the snake, for inspection. Accordingly my friend, accompanied by the patient, who brought

with him a gurrah containing a full grown and vigorous cobra (kenuteah), made their appearance the following morning, and I had the fullest opportunity of enquiring into the case. He informed me that he was fond of snakes, and was in the habit of handling them, having no fear of their bites. The cobra that had bitten him the day before, had been only recently caught in his presence, by a professional snake-catcher. He had purchased, and had been playing with it, when it bit him, through some inadvertence on his own part, on the back of the middle finger of the right hand. He immediately knocked the snake off; the punctures bled freely, and he vigorously sucked the wounds for some time, having also, I think he said, tied a ligature tightly about the wound. He felt no ill effects from the bites. There were two recent marks on the finger which just corresponded to the position of a cobra's fangs. They looked healthy and free from any irritation or mischief.

He took the snake out of the *gurrah*, putting his hand in among its coils fearlessly, although it hissed and tried to strike. He placed it on the ground, where it deported itself after the fashion of cobras, erecting its head and hood, and striking at whatever came near it. He sat on the ground and allowed it to crawl under his legs, caressing it at the same time. This, I confess, aroused my suspicions, but I warned him of the extreme danger he was probably incurring, and I asked him if he was sure the snake had its fangs; he said he had no reason to doubt it, for it had been caught wild in his presence, and he had never lost sight of it since. As there was not the slightest reason to doubt his statement, I was, I confess, somewhat astonished at his power of handling, thus fearlessly, so deadly an animal, and I again warned him of the great risk he incurred. He said he had often done the same with other snakes, and nothing had happened to him until on this occasion.

I have no doubt whatever that he fully believed all he said, and that he imagined he had prevented mischief by his treatment of the bite. To attest it, he had put himself to some inconvenience to shew me the bites and the snake that inflicted them, and there was no apparent reason for mistrusting his account of the matter.

He was about to take his leave, when, being still sceptical, I asked to be allowed to examine the cobra's fangs. He made no objection, but seemed rather to dislike opening the snake's mouth. We, however, effected this between us, and it proved that there were no fangs at all. They had long been removed, and the partially exposed roots of the broken teeth were barely visible above the sheath, leaving just rough surface enough to scratch whatever they came in contact with. He seemed more astonished than I was, and assured me, what I did not doubt in the least, that he had fully believed in the existence of the fangs, for, as he said, the snake had been freshly caught in his presence, and he had had it ever since.

I advised him to be more careful in his future dealings with the ophidiæ, as the next pet cobra might prove to have fangs, and the disposition to use them.

Had this gentleman gone away without examination of the snake's mouth, what other conclusion could have been drawn from his evidence than the most dangerous one, that the bite of a large and vigorous cobra may be inflicted, and yet that the simplest means are sufficient to obviate the evil results. It is probable, that if the details of similar stories, and they are not unfrequent, could be analysed, they would receive an equally [illegible] in investigating the [illegible], which are often so largely tinctured by ignorance and credulity, to impugn the veracity of those who relate them, and who are so prone to believe in the marvellous, and to deal with the improbable, simply because it is so.

I do not for a moment doubt that this gentleman, who so kindly volunteered to demonstrate the successful treatment of the bite of a deadly snake, believed in the whole story, and had not the faintest notion that he had been deceived either by accident, or by the snake-man who captured what was probably already a capture, in his presence. But the direct evidence of the snake's edentate upper jaw was more conclusive to him, as well as to us, than any amount of circumstantial testimony to the contrary.

I may here mention, shortly, another case which was related to me a few days ago by a gentleman holding an important post in one of the Bengal Railways, who was an eye-witness to what he described. He told me that he sent his servant to bring a bottle of soda water. The man went to do so, and in reaching out his hand, in what was probably an obscure or dark part of a room or godown, he must have actually placed his finger in, or close to, the snake's mouth. He came back to his master and said he had been bitten by a snake, and pointed to the two punctures on the finger as attestation of it. Further proof was not long in making its appearance, and within forty-five minutes the wretched man was dead. I hope to receive the details of the case more at length, and to learn something of the unfortunate man's condition during the operation of the deadly poison. Had the finger, in this case, been removed at once, or had a ligature been very tightly tied above the bite, the result might have been different. I say "might have been," because, in the experiments made on the lower animals, I have found that unless amputation or excision is made, with the greatest promptitude, the poison has already entered the circulation, and is rapidly running its course to the nerve centres, where it proves fatal.*

I would take this opportunity of requesting medical men, or others who have the opportunity of seeing cases of snake-bite in men, or even in animals, when well authenticated, to be so kind as to take the trouble of sending a brief account of the circumstances, the symptoms and the results, as they may have leisure or inclination to record; in all cases, especially noting the kind of snake that inflicted the bite.

VENTILATION IN INDIA.

BY J. E. TANNER, ESQ., M. INST. C.E.

THE greatest authorities disagree on ventilation, so much so, that hardly two persons are to be found who hold exactly the same opinion, yet this difference of opinion is not caused by regarding differently the physical laws which govern natural ventilation—for on that point, all are agreed; but they differ, on what may be the best means of causing artificial ventilation mechanically, and on the distribution of the in-coming and out-going air.

Complaints are often made, that ventilation does not give as much satisfaction in India as it does in England, although the same system is adopted; with one difference to make it more suitable to the climate, (?) in that, the openings in the roof for the egress of air are much enlarged. For instance in one of the Hospital barracks at Umballah—and indeed in all European barracks on the old standard plan—the opening at the roof given for ventilation is 3 square feet for every foot run of the length; thus in a barrack 100 feet long, there are 300 square [illegible]

[illegible] where [illegible] are provided to close such enormous openings.

[illegible] is taken to what we have to deal with in [illegible] that as a good material of heat, we should find as a cold [illegible] night in England, such an area would render the building unfit for habitation, nor could we warm it by fires, [illegible] opening equal to it above left open as the roof [illegible] hundred feet of its length. On a hot summer's day in England with all the doors open, ventilation will be perfect. For so soon as the interior air is in the slightest degree heated, it will ascend to the opening in the roof and escape, to be replaced by the exterior and cooler air through the open doors. In England we have not to deal with an outside temperature, [illegible] that breath when exhaled from the lungs.

That this point had been thought of by Dr. Reid is shewn [illegible] remarks on Natural Ventilation, but as he was [illegible] on ventilation in England, he did not dwell on the possibility of the exterior air having a less density than the interior air of a dwelling further than making the remark that [illegible] might be. The following is taken from Dr. Reid's [illegible]: "In all ordinary purposes the natural method of ventilation will be found most eligible, that is, a process by which movements are induced or sustained in the air in the [illegible] to wind is produced in the external atmosphere, these movements being increased, when necessary, by the action of heat, and by the erection of a shaft or chimney, that the heat may acquire additional force." "As air constitutes, in one respect, a balance infinitely more delicate than any that man can make, and as the most trifling increase or diminution in the density of any portion of air leads it to press more or less heavily than before on that which is immediately in contact with it, circumstances almost too inappreciable at first to be considered worthy of notice, can nevertheless so alter its specific gravity, that it immediately begins to press more heavily than before on that which surrounds it, or to give way before the pressure to which it is still subjected, if its density is diminished. But though many popular misapprehensions are still entertained on the subject, it is universally acknowledged by all who have experimentally examined it, that the specific gravity of air vitiated by respiration or combustion—the two great processes that deteriorate air in ordinary buildings—is under ordinary circumstances less than that of common air; it [illegible] and is pressed upwards by the denser and purer air."

"In proportion to the amount of contraction," speaking of the opening given for egress, the temperature of the air and the numbers in the given space, "it may become necessary to increase the velocity of the discharge from the apartment. To [illegible] in or near the roof, the column of warm air, which soon fills it, increases its power; and unless an extreme number of [illegible] for all ordinary purposes. It will act at all times when the density of the air within is less than the density of the air without; and when this is not the case, its power can still be developed by kindling a lamp or fire, or by merely increasing the temperature of the apartment for which it is supplied, as either of these causes produce the necessary diminution of density or rarefaction within, on which its force depends."

[illegible] English climate, and how the chimney could be made to exert more force, i. e., give better ventilation by bringing more cubic feet of air into the room per minute, for he would not have advised that an Indian barrack during the hot weather, when [illegible] its temperature [illegible] shews until that is done, or a fire is lighted in the shaft, ventilation cannot proceed. So long as the exterior air is the coldest of the two all goes well, and in the barrack above quoted, it is almost [illegible] months is satisfactory, nor that it is a rather cold building on winter nights; but during the hot weather there is no ventilation, and it becomes warmer than it ought to be, with the appliances used for keeping it cool, viz., three large thermantidotes.

From there being no means of closing the large apertures in [illegible] prevent ventilation, for they take great care that all doors are kept closed, even should there be a broken pane of glass in one of the doors, the man whose bed may be near is sure to [illegible] that air [illegible] colder than they like, besides the great draught that is occasioned by any small opening, such as a pane of glass feeding the large [illegible] not always satisfactory. The men know nothing about it, as they went to bed when all was sweet and wholesome, that it has become no longer so has grown upon them by degrees, and they [illegible] air cannot but feel surprised that they have not done so. Arrangements such as are adapted to England are what are required for the cold weather, viz., openings at the roof and floor, which can be opened or shut to suit the temperature at the time, yet so adjusted that the men in the barrack cannot alter them.

The same system is expected to answer equally well in the hot weather; it will not do so, it is against physical laws that it should do so, for we no longer have to deal with a barrack warmer than the outside temperature; but one having a temperature [illegible] AND [illegible] HEAVIER [illegible] AND [illegible] AND [illegible] AND

every cubic foot, no augmentation of its temperature, to give it less density, can be effected by respiration (since a temperature of 98° is as warm as breath when exhaled from the lungs), indeed, it is heavier when exhaled than it was before it was respired, as nearly all the oxygen contained in the air, when it was respired, has been consumed, and replaced by the heavier carbonic acid; nor can the moisture (steam), that has been imparted to it, add to its lightness, since the steam has the same temperature as the air of the barrack.

The best way to illustrate how the difference of density affects ventilation, is to consider two tubes of equal internal diameter, 40 feet high (the height of a barrack), placed side by side, and connected at the bottom by a tube having a stop-cock, or some other means of opening or closing the communication between the two tubes. If, when the communication between the two is closed, one tube is filled with water, and the other with oil, and the communication opened by turning the cock, the water from its greater specific gravity, or density, will cause the oil to overflow at the top of one tube while the water will sink in the other, till the weight of the contents of the two tubes are exactly even. The one which orginally held water will still be only water, but will not be full, the other which was filled with oil will be full to the brim, but will have oil at top and water at bottom; and though one is full and the other not, the quantity of fluid in each tube will be exactly of equal weight, although one is not equal to the other by measure, owing to the difference in the specific gravity of water and oil. If water is gently poured into the tube that holds only water, the oil will continue to overflow its tube till it is all gone,—water has taken its place; thus water, from having a greater specific gravity than oil, is enabled to force the oil to give way before it. When the water has displaced the oil, *i.e.*, has reached the top of the tube that originally held the oil, no more can be poured in, since the density of the contents of both tubes are equal, as they both hold water; and being of equal height, one balances the other. The law thus demonstrated by liquids holds equally good with gases, and air that has a less density will give way before another that has a greater. If the tubes have an area of one square inch, and are 40 feet high as before, let one tube be filled with air of 98° and the other with air of 120°; the air of 98° will weigh 137 grains, while the air 120° will weigh only 132 grains; the air of 98° having 5 grains extra weight will force the air of 120° to give way before it.

We may therefore consider the air in a barrack and the atmosphere in the same way as the water and oil in the tubes; *but as the density of the two entirely depends on their temperature*, the air of the barrack must be the warmer of the two, if it is to represent the oil; when, as with the oil, from being the lightest, it is driven out of the ventilators in the roof, by the heavier air entering at the doors or other openings near the floor: the heavier air which has thus entered after being warmed by fires, respiration, or lamps, is in its turn driven out at the roof, and natural ventilation proceeds.

In Indian barracks during the hot weather months, the air of the barrack is colder than it is outside, therefore its air cannot be represented by the oil any more than the atmosphere can be by the water, for it is hotter, and therefore lighter than the air of the barrack. The air of the barrack, then, must represent the water, and the atmosphere the oil, consequently the colder and heavier air of the barrack seeks to flow out of all doors into the lighter atmosphere outside: as water would, if poured into a tube that was nearly touching the bottom of a glass filled with oil; the water, from its greater specific gravity, would instantly distribute itself over the bottom of the glass, in the same way; the air of the barrack, from having a greater density than the surrounding air, will seek to distribute itself, should any openings be given for it to do so. The air that thus leaves the barrack by the doors is replaced by the hot air outside entering through the ventilators; having entered the barrack, part of its heat is absorbed by the walls around. As it is no longer subjected to the rays of the sun, nor to the reflected heat from the earth's surface, what it may thus lose in temperature is not to be regained, particularly if all doors are shut, (for it is universally allowed, they let the hot air in), and what cooled air there may be in the barrack is prevented from too easily flowing out. If the doors were so well made as to hermetically seal all exit, the only augmentation of temperature that would accrue would be more or less according to the area of the openings given for ventilation, for the larger they are, the greater is the surface of contact between the colder air oft he barrack and hot air outside.

In an ordinary house, as any one who has spent a hot weather in the plains knows, all doors are shut during the hot months, from early morning till late in the evening, that the house may be kept cool; should a door be left open for any length of time, the effect is very soon felt, praticularly where no thermantidote is in use. An open door "lets the heat in;" this is caused by the colder air of the house seeking, on account of its greater density, compared to that of the air outside, to escape, which it does at the bottom of the door-way, while the hot air from outside enters at the top of the door-way to supply its place. The heat that enters, enters in this way, and not merely by the contact of the cold air of the house with the heated air outside.

It has been shewn how natural ventilation goes forward, when the barrack is warmer than the atmosphere; also what takes place when the atmosphere is the warmer.

It remains to shew what must result when the temperatures inside and outside are the same, at any degree of heat above 98°, for at that degree, heat from the body or breath cannot affect it; if the temperature is the same, the density must also be the same; so long as the air is pure, neither the outside nor the inside air has a wish to displace the other, all is balanced, and a perfect stagnation must ensue.

From the above, it will be understood how slowly ventilation must, in all cases, proceed, when the temperatures inside and out are nearly the same, for when they are equal, a perfect stagnation results; after the temperature of the outside exceeds that of the in, the openings afforded in the roof for egress become openings for ingress: if these openings are large, and the doors are left open, the barrack rapidly gets warm, and more nearly approaches the outside temperature, than it would have done had the doors been kept shut; and after a certain temperature has been reached, no further ventilation from having left the doors open is procured: unless it is by wind blowing through the building, which is quite apart from ventilation.

There is a certain amount of heat to be borne, and put up with by a resident in India, but there is no reason why in either a house or barrack it should amount to, (in the general way) and certainly should not exceed, blood-heat; after that every degree tells, and we all know how excessively languid we feel, if we have been obliged to breathe air of 100°.

Experience has taught those who have resided some time in the country to rigorously imprison the cool air of the early morning in their houses, by shutting all the doors, for it is universally allowed to be pleasanter to live in the same atmosphere during the whole day, than to allow more (than can be helped) of the hot, but uncontaminated air to enter; hence the necessity of the large and spacious rooms that are found in Indian houses. Were they not large and spacious, they would be positively unwholesome, for those who have fully experimented on ventilation have proved that each person in a room contaminates four cubic feet per minute. Notwithstanding all precautions taken to prevent hot air entering, it does so

[illegible] according as to whether the majority of the doors [illegible] in small [illegible] large [illegible] the cold air flows [illegible] the lower part, and is replaced by hot air coming [illegible] higher up. It is drawn [illegible] a current, which may be [illegible] the supply [illegible] in the afternoon, the air of the [illegible] shews a [illegible] than it did in the morning, which [illegible] be accounted for by the quantity of breath that has been exhaled in a room that was 90° or so in the morning, and if it was then in best of the walls it would have shewn itself far earlier in the day. But a barrack, however large and spacious it may be, cannot be kept up as a private house is, for the numbers in it contaminate such a large [illegible] of air as to put the cubic contents of the barrack out of all proportion to it: since 50 men will contaminate 12,000 cubic feet in one hour.

[illegible] more [illegible] than the air of the barrack, it has been shewn that there is a tendency for the hot air to enter, more or less quickly, according to the size of the roof ventilators, and whether the doors are open or shut. It is [illegible] that barracks get warm, and that the men do not thrive well, when they have to breathe an atmosphere that exceeds blood-heat; nor that doing so makes them feel languid, and reduces their stamina, for a man breathes certainly no quicker, and at each respiration takes in exactly the same number of cubic inches, whether he is breathing air of 32° or 100°, yet in the latter case he only gets ⅞ of the amount of oxygen (on which life depends) compared to what he does when he is breathing air of 32°, owing to the air having increased its bulk from the heat. The system, therefore, lives with greater energy in a cold climate to what it does in a tropical one, and more nourishment is required during the cold weather than the appetite is good, but it gradually diminishes as the weather gets warmer. In barracks having 300 square feet of opening in the roof, for every 100 feet of their length, it is not surprising that they get warm, and are for many days during the months of May, June, and July at a temperature above 98°, for the doors are often left open by the men in hopes of catching a breeze.

Natural ventilation will always go on, whenever the density of the air within is either more or less than the air without. Openings can be given so as to facilitate or retard the ingress and the egress, but Nature is always ready to equalise the temperature inside and out. On the one hand, warm air leaves the building and the cold air from outside enters; which if left to its own devices, that is, not obstructed in its ingress or egress, nor warmed by fires, &c., would in time so cool the walls, that the temperature inside and out will become equal; on the other hand, cold air leaves the building, that the hot air from outside may enter, which, if left to its own devices, will in time so warm the walls as to make the temperature inside and out equal. It is not surprising, that the hot air chooses a different door to enter by, to the one chosen by the cold for entrance. If the air of a barrack is wished to be kept cooler than the outside temperature, it is necessary to retard the ingress of hot air as much as [illegible] [illegible] as rigidly as cold air is kept out in Canada, for not only is the heat unpleasant [illegible] [illegible] which heat can only pass away by heating any colder air that may afterwards [illegible] barrack, and the heat absorbed by the walls during the day is given off to the colder air of the night. Besides, from the walls being heated, a more even temperature is established between inside and out, their densities more nearly [illegible] during a great part of the day, consequently [illegible] less ventilation.

(*To be continued.*)

MEMORANDUM ON THE EFFECTS OF FAMINE IN RAJPOOTANA.

BY W. J. MOORE, L.R.C.P.,

Surgeon, Inspector of Dispensaries.

"PLAGUE, pestilence, and famine" being so intimately associated, I have thought the present period of scarcity should not be permitted to pass, without some attempt to note the effects of insufficient food, as regards the production of disease among the people of this part of India. I propose, first, comparing the records of the association between want and disease, in other countries, and secondly to mention any special maladies which may have arisen, attributable to peculiarities of climate or local circumstances. With this view, in order to supplement individual observation, I addressed all medical officers in Rajpootana, (likely from their position to have been brought into contact with the unfortunate suffering from famine) [illegible] in the service. I [illegible] the reports forwarded to me, as Superintendent General of Dispensaries in Rajpootana; and the more intelligent native doctors employed in these institutions were addressed with specific questions, so that untrustworthy results, arising from deficiency of special knowledge on their part, have been reduced to a minimum.

The [illegible] many [illegible] demonstrate how closely plague, pestilence, and famine, have ever been related. The accounts extant, of the epidemics of the middle ages, shew it was so in remote times, and without looking further than Ireland, we find during even the present century, more than one melancholy illustration of the fact. The principal disease arising in Ireland, as the effects of famine, was a deadly contagious fever, resembling typhus, which, once originated, was conveyed into other countries, even to America, attacking numbers, although uninfluenced by the predisposing cause.—want.

Similarly there are abundant records of such disease prevailing in various parts of the continent of Europe, especially in Germany during seasons of scarcity, and popularly known in the country last mentioned under the significant name of "hunger pest." Those who escaped this most fatal form of fever became the victims of other maladies, such as scurvy, purpura, and a masked febrile condition terminating in atrophy or wasting.

Another recent example of the consequence of deficient food was the condition of the British troops in the Crimea in 1854, who, "with just sufficient food for a time of repose, and ordinary temperature, were called upon to make great muscular exertion, and to sustain the warmth of the system in the midst of severe cold."

The immediate effects of starvation as noticed in other countries are according to the best authorities as under. Hunger and pain at the pit of the stomach relieved by pressure. The hunger, however, soon ceases, and is succeeded by a feeling of exhaustion and intolerable thirst, fainting, and even loathing of [illegible] At the same time, [illegible] a weakened condition of mental and moral feelings, and diminution of general physical sensibility to pain. Langour, despondency, listlessness, inability to think, and emaciation, are prominent symptoms. The person affected is also liable to giddiness, dimness of vision, with oftentimes temporary idiotic delirium, or mania and convulsions, terminating in lethargy and coma. The skin often exhales a peculiar offensive fetor, and is covered with a dark, coloured excretion.

The effects of a more gradual deficiency of food somewhat differ. In such cases gradual emaciation is first noticed, with feebleness of circulation, tendency to cold particularly about the extremities, with swelling of feet and ankles; the individual even, although not feeling the sensation of acute hunger is languid, desponding, incapable of exertion, and frequently very sleepy, the countenance being "forlorn and dejected." It is these reduced to this condition, who in Europe become the

subjects of famine or relapsing fever, of scurvy, or purpura, or of the marked minor febrile disorder previously referred to.

But the symptoms of want of sufficient food in India, as I have noted them, differ something from what has been observed as detailed above. There is the same emaciation, the same dejected expression of countenance, thin and sharp as though the skin were drawn tightly over projecting features, the same giddiness and weakness and tendency to sleep, the same apathy and unwillingness for exertion. But in addition there has been frequently observed sickness, vomiting, cholera, diarrhœa, opthalmia, sun-stroke, in the earlier stages, with malarious fever, diarrhœa, and dysentery at a later period. *Gunj*, or scald head, is also noticed as more than ordinarily prevalent by Dr. Compignie, at Beaur, and premature labour by Dr. Murray, Ajmere. In this locality, opthalmia has been more than usually active. In no account of the effects of famine in Europe to which I have had access are these disorders noticed as prominent characteristics. On the other hand, there has been a total absence of, 1st, famine or relapsing fever, and, 2ndly, of the dark fœtid cutaneous secretion noticed in Ireland and Germany, while scorbutic affections have not been more than usually prevalent in most localities.

The prominent occurrence of weakness, vomiting, and diarrhœa among the Indian famine-stricken, must in a great measure be due to the use of various materials unsuitable for food, either alone or mixed with a variable proportion of grain. On the very first pressure of scarcity, this time last year, I received information from several sources of this result. The apthous condition of mouth so often noticed, may also be attributed to a similar cause, the whole again being manifestation of a bad form of dyspepsia.

The chief jungle products used as food during the present famine in Marwar (the same being the case throughout Rajpootana generally), have been thus denominated by Dr. King, formerly in medical charge of the Joudpoor Agency: 1, *mothee*, the root of *hymenochate gropa*, a species of rush; 2, *kegra*, the bark of the *acucia leucophlœa*; 3, *broont or bharoont*, the seed of the *achyranthes aspera*; 4, *gokum kantee*, the capsules of the *trib[illegible] angustissimus*; 5, *malecha*, the seed of a grass; 6, *tull*, the refuse of the *sesamum orientale*, remaining after the oil has been expressed; 7, seeds of various cucurbitaceous plants.

How diarrhœa is originated even among those not obliged to make use of the above material is well described by Dr. Miller, Nusseerabad: "the coolies, and others employed on Government famine works, who have had at least enough to eat, were in many places decimated by diarrhœa and cholera, though more by the former. I noticed that they ate nothing in the morning, and that at twelve o'clock they made the grain into a kind of loaf, half roasted rather than baked, washing it down with enormous quantities of water of any description. The inevitable consequence was, they were scourged by diarrhœa of a severe and intractable character, which carried off numbers."

The occurrence of sun-stroke among the Indian famine-stricken, must of course be attributable purely to climate, and tropical heat, acting on weakly debilitated systems.

Aguish or malarious fevers must also be regarded as entirely due to climate. It may be assumed that two-thirds of the adult population of India are more or less impregnated by the malaria poison, which dormant in the system, is raised into activity by all causes tending to depress the physical or vital powers, as want and fatigue. Similarly, with regard to dysentery, the action of a tropical climate being to congest the abdominal viscera, explains the frequency of bowel complaints to terminate in dysentery, in these debilitated subjects.

Cholera has prevailed universally, and would appear to have constituted the chief cause of mortality. But there is no doubt, that a very large number of the cases returned as such were not true cholera. The total death-rate to treated is too small for Asiatic cholera. Cases under my care have recovered with stimulants and meat broth, amendment dating from the first mouthful of the latter. Yet these people presented symptoms, generally supposed to be distinctive of cholera, namely the white evacuations, and suppressed urine. Judging from the prevalence of pseudo cholera, during the past few months, it would seem, that among natives of India, want is capable of exciting a class of symptoms, very similar to true cholera; or in other words, the vital depression attendant on insufficient and improper food, excites a similar train of symptoms, to those following the vital depression consequent on the cholera poison. (Hence the importance of regime and diet during cholera seasons.) With respect to cholera, Surgeon Martin, Deesa, states, "I believe that all the cases I have seen have not been true cholera;" and although vomiting, diarrhœa, and collapse, &c., were present, both Drs. Martin and Galloway, attribute the symptoms to improper food.

Dr. Miller, Nusseerabad, also states, he has no doubt whatever, that the attack of epidemic cholera in May, June, and July, was in a great measure due to the famine, and consequent under-fed condition of the poorer population. "For it was very remarkable, that the cases were entirely confined to the very poorest class, and that during two months of the epidemic, not a single native of the better class was ever attacked."

The apathy and disinclination to exertion, so characteristic of starvation, has been well exemplified in the difficulty experienced in various localities, in inducing the people to work even for food. This would appear more marked among natives than among Europeans.

Scurvy and purpura, so frequently found accompanying want in Europe, do not seem to have been generally noticed. And this may probably be accounted for, by the vegetable and sub-acid nature of the supplementary food used. Dr. Miller, Nusseerabad, remarks, however, on the appearance of scurvy among the men of the 11th Bombay N. I. A class obtaining sufficient, but probably coarser and more indifferent grain than usual, but not obliged to add to the bulk consumed by the addition of the barks and roots named.

Accumulated experience is against the existence of *famine* or *relapsing* fever. Dr. Compignie, Beaur, states, "I have seen no famine fever whatever." Dr. Harvey, Burtpoor, writes "no case of relapsing fever has come under my notice." Dr. Martin, Deesa, "the type of fever has always been typhoid never relapsing. I looked out especially for this." Dr. Galloway of Odeypoor, "no cases of relapsing or famine fever have come under my own observation, or the observation of the native doctors." Dr. Eddowes, Erinpoorah, "I have not seen any famine (relapsing fever) here at all." Dr. Newman, Joudpoor, "I have heard of no disease approaching in its type to famine or relapsing fever." Dr. Miller, Nusseerabad, "I have not met with any case of famine or relapsing fever." The replies of the native doctors are also to the same effect. Lastly, I have not myself seen any instance of the disease.

The above evidence regarding famine or relapsing fever appears to me to be of great importance. It corroborates the assertion of the greatest living authority on fevers (Murchison), that famine or relapsing fever does not occur in India. It also agrees with the experience of former famines in this country, after which this most deadly form of fever has never been known to prevail. It also tends considerably towards negativing the opinions held by so many that the contagious fever afflicting the prisons of the North-West and Punjaub from 1860 to 1867, was simply famine fever due to defective diet. Lastly, it leaves a somewhat consolatory reflection that in a country like India, where so many fatal epidemics are experienced, there is at least one of the most fatal, not yet visiting the land. A malady

development of the disease. Most certainly the amount of dis-

the conclusion, that some other agent is necessary to its production; holding in recollection, the circumstances of the two countries. Ireland, or rather Europe and India, it would appear that over-crowding is an essential to the excitation of famine fever.

gregate in ill-ventilated dwellings. In India the inhabitants live more in the open air; the majority of those suffering from scarcity adopting a nomadic life, and wandering off to other localities where they live pretty much *sub-jove*. This view of the question should, however, result in greater caution as regards over-crowding in poor houses, formed under supervision of British officers, open sheds being preferred to closed buildings. The fact of there being no evidence of the occurrence of true famine fever in India, cannot be accepted as a guarantee that such malady may not be originated. It is but a few years since the existence of both typhoid and typhus fevers was denied in India. Yet, now, the former is admittedly *endemic*, and typhus has been reported by at least three observers.

Under such circumstances, I venture to remark, that the propriety, on sanitary grounds, of assembling large masses of people at Agra during the ensuing cold season is questionable. Many would travel long distances, would commence the journey in a condition below par, would probably experience difficulty *en route* in obtaining supplies, would (as all who know what native camps are will readily admit) be exposed to crowding in small tents during the coldest period of the year, and lastly must be very likely to carry with them the germ of the cholera poison, now so extensively active throughout Rajpootana. Under such conditions, the out-break of true contagious famine fever might terribly supplement the already heavy mortality of the present disastrous year. It is not the well-fed British soldiers or sepoys, or the chiefs and their immediate retainers, who would in the first instance at least suffer, but it cannot be ignored that two-thirds of the following of every native chief would be pre-disposed to the invasion of disease.

The following table, being the results of a comparison of the dispensary returns in Rajpootana for the months of May, June and July, 1868 and 1869, shews a predominance of certain maladies during 1869, and thus illustrates the foregoing observations. But in estimating the value of the table it must be recollected that the very poorest villagers, the greatest sufferers from

Years.	£	£	£	£	£	£	£
	Rates per cent. of Attacks.						
1868	94	64	66	46		5	
1869	125	73	83	65	99	79	3

intimately connected with famine), having acquired a markedly

the existence of wide-spread distress. Did the figures refer to the very indigent classes, such as inhabit the poor houses, the ratio would be much greater. The dispensary reports from Burtpoor shew the least difference, those from Keraolee, and Marwar, the greatest.

Before concluding, I beg to notice the various remarks in my correspondence, evidencing how much has been done towards the prevention of distress, and which offered spontaneously, appear worthy of note. Thus Dr. Murray, Ajmere, writes—"in the poor houses of Ajmere, we have rescued from death a great

of whom have been admitted suffering from all the symptoms of starvation." Dr. Compignie, Beaur, "I think the people in the poor house have had a remarkable immunity from disease of all kinds," which certainly would not have been the case had they not been well taken care of. Dr. Harvey, Burtpoor, "no case of actual death from starvation has been observed. Extensive relief works have given employment to able-bodied paupers, and as above-mentioned, women and children have been relieved and supplied with food at the hospital." Dr. Galloway, Odeypoor, "the scarcity here has been very great, but early steps were taken by the authorities, for the supply of food to the famine-stricken. At present about 9,000 people are fed daily at the expense of the Durbar.... This, although a poor diet, has no doubt been the means of saving many lives, and preventing the development of such diseases, as relapsing or famine fever." Dr. Mullens, Kharwarah, "I am glad to say the famine has touched this part of the world so lightly, that I have nothing anent it to communicate to you. When it was known that there would be scarcity of food, Col. Mackenzie brought in the districts a large supply of grain, and this was retailed at a fair price to the men. The men are mainly recruited from 'pals,' within easy reach of the station; and as during the major part of the time, the quantity they were allowed to purchase was unrestricted, they were able to partly supply their families, as well as feed themselves." Several of the native doctors also remark on the good effected by the

NOTE ON CHOLERA.

By Surgeon A. G. Young, *6th Royal Rifles*.

In the *Medical Times and Gazette* of 22nd August, 1868, Dr. Haughton remarks,—"our hopes for the future as to the treatment of cholera, lie, as I believe, in the direction of supplying to the body directly its lost animal heat."

that this important indication can be fulfilled, more rapidly and successfully, by the hypodermic syringe and a few drops of liquor ammonia, than by the ordinary methods in use, has now I think been successfully proved. Since you were good enough to publish the first case in which I tried the hypodermic injection of ammonia, I have not only succeeded with it in another case but I have also received most satisfactory testimony of its efficacy, on a more extended scale, from Bengal.

Dr. Wright, of the 93rd Highlanders, writes from Jhansi, "since my former letter to you, I have been able, fully and satisfactorily, to demonstrate the curability of cholera by the hypodermic injection of ammonia." He then details three cases in which the collapse in each was at a maximum, the suppression of urine complete, rice water evacuations and vomiting, cramps, &c., all present. Yet the ammonia injection has cured them all, and the good results followed so quickly

after the injections, that no doubt whatever can be entertained but that the syringe worked the cure. All of them are now off the hospital books for cholera, quite convalescent."

My own observations, in the first case I treated on this plan, regarding the rapidity of action of the ammonia used hypodermically, entirely coincide with Dr. Wright's experience given above. But in the only other case in which I have had an opportunity of using it, the rapid improvement in the patient's condition was not so apparent. Still, even in this second case, I did not use the injection a second time, one was sufficient, and shortly after it, gradual and steadily progressive improvement set in. In the first of the three cases given by Dr. Christison in your October number, the general phenomena, after the injection, were somewhat similar to those observed in my second case.

My limited experience does not warrant me in attributing curative powers entirely to the ammonia, indeed, I have hitherto deprecated its being termed a "cure" for cholera. It undoubtedly gives a very powerful impetus to the *vis vitæ* when at its lowest ebb, and thus affords invaluable time for the *continued* employment of other remedies, which, had no such stimulus been administered, would have proved utterly useless. Dr. Wright's more extended observations have led him to a more definite conclusion which, I sincerely hope, will stand the test of experience; and I am greatly indebted to him for so kindly allowing me to quote his success in all the cases in which he has followed this plan of treatment.

The administration of diffusible stimulants, broths, and arrow-root jelly in small quantities, and the use of external stimulating applications ought, in all cases, to be continued until reaction is fairly established. Then, as Dr. Wright remarks, "stop stimulants, and otherwise counteract the effects that might ensue."

There can be no doubt of the greatly increased power of remedies when used hypodermically; and should ammonia prove to be only a partial success in the treatment of cholera, I shall still credit the great mystery of medicine with an efficient substitute that will find a suitable vehicle in the hypodermic syringe.

Bellary, 26th October, 1869.

SMALL-POX AND VACCINATION IN BHURTPOOR.

By Robert Harvey, M.B., &c.,

Superintending Surgeon, Bhurtpoor Political Agency.

I was induced to study closely the late epidemic of small-pox in Bhurtpoor, in its relation to the progress of vaccination in the state, and as bearing on some undecided points concerning small-pox and vaccination in India generally. The observations and [illegible] which I have based on evidence of eight hundred cases of small-pox seen and noted by myself during last cold season, and on the weekly returns of cases and deaths made to the City Magistrate. The latter returns are exceptionally accurate and trustworthy. They were tested over and over again in all manner of ways, which the epidemic facilitated, and an additional proof of their accuracy is found in the fact that the results derived from them tally in a great degree with those derived from my own figures. These, so far as they go, may be relied upon. It was of course impossible to watch the course of the disease in all cases, and, indeed, the majority were seen only once or twice, when of no exceptional interest, and the post-vaccinal series were noted throughout. The original object of the investigation was to test previous vaccine work, and the great point being to see as many cases as possible, it was difficult to pay special visits to distant cases as the new ones were so numerous. On this account my notes are somewhat incomplete on several interesting points, but so far as vaccination is concerned, they give full and abundant information. All the cases except seven (entered because of their relation to others), were seen by myself. Nothing but the final result has been recorded at second hand, and I have preferred leaving some points unnoticed to subjecting my conclusions to the suspicion of being based on uncertain data. I am solely responsible for the figures, and take this opportunity of saying that if on some points my conclusions—as derived from these figures—differ from those ordinarily received, it is on *a posteriori* grounds, the questions having been forced upon me by the figures, which were not in the first instance collected with any reference to them. As I said before, it was to test the goodness or otherwise of the Bhurtpoor vaccinations that the observations were made, and they were simply recorded from day to day with no view to their future use as bearing on controverted questions. The conclusions have been gradually formed in analysing the returns long after small-pox had ceased, and I had no pre-conceived opinions to support. Besides a sketch of the progress of the epidemic, the returns give room for an enquiry into the value of vaccination in India; the alleged deterioration of the protective power of vaccination from change of climate; and the supposed greater prevalance, severity, and fatality of small-pox in hot countries, and among the dark-skinned races. On each of these points some light will be thrown, which, it is hoped, may help to reconcile conflicting statements and beliefs. As preliminary to these, however, and as tending to the better appreciation of results, I shall give a brief outline of the progress of vaccination in Bhurtpoor, from its first introduction, up to the time of the recent outbreak.

Seventeen years ago the Maharaja was vaccinated with a few other children, by the present head of the Medical Department, Dr. Murray, then Civil Surgeon of Agra; and a few cases were afterwards operated on each year; but no record has been kept of these, nor were any regular vaccinators employed, and the little work which was done can have had no effect in bringing the prophylactic to the notice of the public. So far as can be discovered, no systematic attempt to introduce it appears to have been made till the season of 1861-62. Up to that time the Agency Surgeon's operations seem to have been limited to isolated cases, vaccine work forming no part of his duty, and the operations were probably too few to make any appreciable difference in the vast number of unprotected persons. The late Dr. Stewart was the first to endeavour to remedy this unsatisfactory state of things, but there was a good deal of opposition; his cases were not numerous, and when Dr. Mott was appointed to succeed him in 1861, it may fairly be said that vaccination was only beginning, and that, practically, its introduction dates from that time. Dr. Mott took up the subject with energy; taught the Native Doctors and Compounders attached to the different dispensaries, and made them expert operators under his own supervision, and by securing the services of two good vaccinators from Agra, and instituting a series of rewards for good work, succeeded in infusing a measure of his own zeal into his subordinates. His exertions met with success from the first, large numbers of cases being operated on each year, and the opposition being less than appears to be generally the case. This may be ascribed in part to the moral effect of the Maharaja's having been vaccinated in infancy, and in part to the comparative freedom from prejudice which characterises the Jâts. There was much apathy, and little appreciation of the value of the boon at first, with occasional active resistance to the vaccinators, but year by year it became easier to get cases, active opposition declined into apathy, and apathy to some extent changed into appreciation.

It will be seen that the system which Dr. Mott introduced is in the main the old dispensary system of vaccination, and it has many of the disadvantages of that system. It is especially season, for instance, the Native Doctors and Compounders being

[illegible] supplied, [illegible] and at all times [illegible] to vaccinate villages at any distance [illegible] dispensaries, such villages having to be left to a [illegible] a perquisite vaccinator, whose work cannot be properly [illegible]. The chief recommendation of the plan is its cheapness, no special vaccine establishment being necessary. The [illegible] in which the agency surgeon is placed [illegible] the objection which has been fatal to the dispensary system as formerly practised under the nominal superintendence of civil surgeons in British territory. Their efficient supervision was almost impossible, the civil surgeon as a rule being tied to the station, and unable to visit his district more than two or three times a year. In Bhurtpoor, on the other hand, the medical officer is constantly in camp during the cold season; and visiting the different centres frequently,—is able, to a considerable extent, though by no means perfectly, to superintend the work.

In spite of this imperfect agency great progress was made during five seasons under Dr. Mott's care, and when he left in 1866, all preliminary difficulties had been to a great extent overcome, and it remained only to push on the operations, and increase, if possible, the percentage of success. This in 1865-66 had been only 71·80, a considerable decrease on previous seasons, and it seemed evident that, unless it could be raised, great discredit must be thrown on vaccination on the next outbreak of small-pox, the people, as a rule, being little able to discriminate between successful and unsuccessful cases. With this view, and in order to assimilate the Bhurtpoor system to the more perfect one obtaining in our own provinces, a native superintendent of vaccination was engaged to assist in the inspection and verification of the work, and each season as many men as could be spared were temporarily withdrawn from all other duty and put under his orders, the Native Doctors continuing to vaccinate in the immediate neighbourhood of their dispensaries. In this way great improvement was hoped for, without trespassing too far on the liberality of a State which had already done so much for its sick poor. The following medical institutions are kept up by the Durbar, which last year spent nearly fourteen thousand rupees on "Medical services:"—

A general hospital, with a daily average this year of 92 in-patients.

A jail hospital.

A sudder dispensary in the city of Bhurtpoor.

Nine branch dispensaries.

The use of crusts has been gradually abolished, fresh lymph being substituted. Each vaccine centre has been frequently visited, and in distributing the rewards, regard has been had solely to the character of the work produced for inspection, numbers being looked upon as subsidiary to success. Attempts have also been made to impress upon the people the objects and advantages of vaccination. The result of these measures has been a steady increase in the percentage of successful cases, which rose to 80·04 in 1867-68, and to 86·53 during last season. While I believe these figures to be fairly correct I will not vouch for them, but there can be no doubt that each year has shewn a considerable improvement on its predecessor; and it frequently happened to me last cold weather to go over a day's work—numbering thirty, forty, or even fifty cases—without meeting with a single child in whose arm the virus had failed to take. The increased success is due to many concurrent causes, the chief of which is undoubtedly the use of fresh lymph; but prolonged experience in the operators, more careful selection of cases, and the abandonment in great measure by parents of a practice of washing off the virus, or opening and applying drugs to the vesicles, have all helped to swell the return of successful cases. As an illustration of the progress that has [illegible] I may mention that when small-pox was last prevalent in 1864-65, Dr. Mott reported (annual report 1864-65), that "the epidemic caused greater doubts than ever concerning the utility of vaccination," whereas during the recent outbreak, the vaccinators were eagerly sought after by the more intelligent of the people, and I personally vaccinated nearly two hundred and fifty children at the special request of their parents, and might have done many more had I always had fresh lymph by me.

It is much to be regretted that no exact estimate can be formed of the number of persons protected by vaccination in the city of Bhurtpoor at the beginning of the recent epidemic. Yet as the whole significance of the succeeding figures depends on the relative proportion of protected to unprotected persons, it is necessary to have some idea of what that proportion was. The vaccination returns cannot be made use of, as they do not discriminate sufficiently between cases in the city itself, and those in the villages around, and even if they did, they are not such evidence as would command respect. The following table gives the result of the examination of nearly four hundred children early in the epidemic. It would have been more conclusive had the numbers been greater, but existing small-pox and vaccination complicated further enquries, and introduced sources of fallacy:—

Children [illegible] eight years of age.	Number examined.	Percentage.
Bore marks of [illegible] small-pox ...	124	31·44
Had vaccine cicatrices ...	132	33·67
Unprotected ...	103	26·49
Total ...	389	100·00

This gives 59·61 children protected by vaccination to 40·39 not so protected, in every hundred who had not gone through small-pox, or as nearly as possible three to two. In my last annual report I stated that I thought this proportion too high, and that unprotected were probably as numerous as vaccinated children, but I now believe that the percentage indicated was not excessive. The numbers are small it is true, and, taken by themselves, would be of little value one way or other, but they are more than borne out by others, as will appear when we come to enquire into the number of cases of small-pox, and their proportion to population at different ages. This will, however, more properly fall to be discussed in connection with the influence of vaccination on the epidemic, when I hope to be able to shew, not only that the work done in past years has been good, but that vaccination has been sufficiently accepted by the people to have had a very marked effect in diminishing the number of cases and deaths which, without vaccination, were to have been expected.

(To be continued.)

HINTS IN PRACTICE.

BY DR BADDIE,

Surgeon, Calcutta Native Hospital.

[illegible] remarks [illegible] "that it was not a truism." The [illegible] "that practitioners [illegible] made aged truths, but perhaps [illegible] truths."

(*Continued from page* 184.)

VII.—REGARDING SOME ORDINARY APPLICATIONS USED IN SURGERY.

(a.)—Tincture of iodine, B. P., 1867. Few are the external applications which surpass this as an aid in minor surgery, it is largely used in this hospital, where cases of almost every description derive benefit from its employment, which may be ascribed to the frequency of the scrofulous diathesis, with its various sympathetic complications, either inherited or contracted, as often met with among the lower orders of natives.

In abscess it is almost indispensable, either applied or rubbed after they have been opened, and as a *prophylactic* against the formation of abscess, which so frequently follow the opening of abscesses in accessible parts, such as the face, fingers, hand, and the extremities, I know of no better.

(b).—Tincture of perchloride of iron, B. P., 1867. For the cure of *nævi* or small *erectile tumors*, I have found nothing answer so well as the subcutaneous injection of the tincture, which can be repeated, at intervals, whether the tumor be of an arterial, venous or mixed character; the remedy, however, seems best suited to the former.

As an application in erysipelas, traumatic or idispathic, I believe the tincture to be superior occasionally to the solution of nitrate of silver, and it has this advantage that it may be oftener repeated, and that by the patients' attendants. It also often arrests that erythematous condition of the skin, so common during the progress of carbuncles, or after cutting operations, and which, if left unchecked, not unusually terminates in erysipelas.

(c).—Warm dressing is made by mixing and slightly heating,—resin ointment 4oz., cocoanut oil 2oz., oil of turpentine 1oz., in this are soaked pieces of gugjee cloth, which can be applied with benefit to almost any form of sore or wound requiring a slight local stimulant and occlusion from the air, and being very cheap, is admirably suited for hospital use.

(d).—Carbolic acid. Besides the ordinary purposes to which this acid is daily being put in surgery, combined with water, oil, putty, &c., its employment *in an unmixed form* as a radical remedy in maladies where the use of the knife, scissors or ligature appears contra-indicated, seems well worthy of trial.

I have tried it in a few cases of *internal piles*, some of them in clusters, and with most pleasing results, the patients having been relieved of their complaint in a short time, and certainly not with more pain than if nitric acid had been used, and with no abrasion of the mucous membrane, which after a time appeared braced, and in a condition most to be desired. Calvert's acid was the preparation applied in these cases.

In epithelioma of the tongue, it has seemed to me to answer better than any other local application that I have tried.

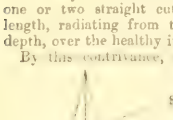
VIII.—ON THE REMOVAL OF DEEPLY AND FIRMLY IMPARTED FOREIGN BODIES.

It sometimes happens that having made a free incision over the place where the object lies, it can neither be seen or dislodged; if then *a stream of water* be poured over the part from some height, for a short time, it will probably be found to wash out the body, or if it fail to do so, it may loosen it, and by blanching the parts bring it better into view, and thus allow of its being extricated.

IX.—ON THE USE OF STELLAR INCISIONS IN CERTAIN OPERATIONS FOLLOWED BY A CIRCULAR CICATRIX.

Nothing is more annoying to a patient who has had hypertrophied skin removed from the penis, either alone or in conjunction with a scrotal tumor, than to find on recovery that the usual circular cicatrix has contracted so much, as to constrict the organ to that degree, as to render it incapable of being distended, and in the course of time, from want of sufficient nutrition, it shrivels into a button-like body. This inconvenience may be obviated by making, at the time of the operation, one or two straight cuts upward, of at least two inches in length, radiating from the circular incision, and of the same depth, over the healthy integument of the pubic region.

By this contrivance, much the same result is gained, as the tailor obtains, by letting in a gusset, for the incision gapes, and its edges eventually adhere at a little distance from the original stellar line of incision: and thus the constriction of a circular cicatrix is, as it were cased off.



DR. J. W. OGLE, of St. George's hospital, states that the hydrate of chloral has proved a most useful and satisfactory hypnotic in doses varying from 5 to 10 grains, and no unpleasant results appear to follow its use. In an attack of delirium tremens a 20 grain dose procured sleep.

CASES FROM PRACTICE.

HEPATIC ABSCESS.

By J. FAYRER, M.D., C.S.I.

AN English officer, aged 29, of tall, slight figure, and apparently of delicate constitution, came under my care on the 4th September, 1869. He had just arrived from a station in Oude, where he had suffered from the disease for which he was leaving the country. He had been in India about three years, and had had good health previous to the present attack, which commenced in July last. The following are his own brief notes of his case before he reached Calcutta:—

13th July, 1869.—"Severe headache in the morning and during the night, was exposed to the sun all afternoon; staid in the house next day and took aperient medicine. 15th to 22nd July.—At duty, but not feeling well. 21st.—Whilst riding home in the morning, got what appeared to be a stitch in the side. 22nd.—Under medical treatment; kept at home and took aperient medicine. 24th.—Pain much increased; eight leeches were applied to the side; took aperient medicine; during the evening had a shivering fit. 27th.—No better; twelve more leeches to the side. Between the 3rd and 15th August had three blisters over the liver; pain inside continued much the same. About the 18th August the original pain gave place to a diffused pain throughout the right side; counter-irritants were applied. 25th.—Observed a slight swelling about four inches from the spine and just below the ribs. 28th.—It was pronounced to be an abscess, and I was sent to Calcutta to appear before medical board. During this time the bowels never moved without medicine. 1st September.—Started for Calcutta, bore the journey very well."

He arrived in Calcutta on the 4th September, and I saw him that morning. He looked weak, anæmic and emaciated, with a sallow tinge of the skin, and the general aspect of a man suffering from liver abscess. On examination I found that the liver was enlarged downwards, posteriorly, and that just below the last rib in the right lumbar region, about four inches from the spine, there was a prominent fluctuating swelling, which was evidently a liver abscess pointing posteriorly, and rather low down. He had no fever; pulse 100; skin cool and moist; no great pain; little sense of fulness and uneasiness in the right side; breathing also slightly embarrassed. He was taking no medicine; bowels had been confined for two or three days, but he felt no inconvenience from it and his tongue was clean, moist, and the papillæ natural. His appetite was also by no means bad. It was evident that he was not now suffering constitutionally from the presence of pus.

On the 5th, after rest and a good night, I opened the abscess at the most prominent point, having made an incision through the integument, and then inserted a large trocar and canula. I drew off about 18 ounces of thick pus, which had the peculiar appearance and odour of that of a liver abscess.

I immediately syringed out the cavity with a solution of carbolic acid, ʒi in a pint of water. Left the canula in, and plugged it with lint soaked in carbolic acid one part, glycerine four parts; a bandage and tapes secured the canula in situ. I ordered him also a solution of quinine and sulphuric acid in calumba. Diet of soup, bread and milk, a little wine; the latter he did not like at first.

In the evening I again emptied the cavity of about eight ounces of pus, and washed it out as in the morning. He had no fever during the day. His pulse has come down since yesterday, but quicker than it was in the morning. He feels well; much relieved by the removal of the pus; an enema was given to-day, but it did not relieve him; ordered two aperient pills.

September 6th.—Drew off about eight ounces of pus this morning, and about four more in the evening; removed the canula, as it was irritating him; kept the wound distended with lint soaked in carbolic glycerine. The cavity is washed out on each occasion that the pus is removed with the carbolic acid lotion. Bowels have acted freely; the pills were aided in the morning by a sulphate of magnesia draught. He has taken his food fairly, and now takes beer instead of wine; slept well; looks and feels better, pulse 88 in the morning, has quickened a few beats in the evening, but there is no apparent increase in temperature.

8th.—He has been doing well; the quantity of pus diminishing daily, this morning about six ounces, in the evening not more than two. He takes food well; sleeps well, and is in good spirits.

congestion terminating rather insidiously, as it frequently appears in inflammation and suppuration, the pus probably having commenced to form when the rigor occurred on the 24th, about [illegible] ance. About this period, as inflammation involved the surface, the pain increased and continued, the perihepatitis, of which it was an evidence, proving so far salutary in causing adhesion of the lower portion of the right lobe to the parieties, and thus preventing extravasation into the peritoneal cavity.

[illegible] the history of the case renders it probable, as there is no reason [illegible] dysentery or ulceration of the intestines.

The prognosis is also hopeful, as latterly he had been free from any constitutional fever such as would be caused by extension of the suppuration, and the rapid contraction of the cavity, after evacuation of the pus, evinced the tendency [illegible] carbolic acid solution was attended with the best results, as I think that the antiseptic was beneficial in aiding the rapid contraction of the cavity.

I believe that his chances of complete recovery are enhanced by the change to sea, as whatever the capacity for repair might be I feel convinced that it must be increased by the change of climate, and is more likely to proceed to perfect recovery at sea than in the damp and exhausting heat of September in Calcutta.

[illegible]—J. L.

COMPOUND FRACTURE OF THE LEG: DEATH [illegible] AND ISCHURIA.

By J. FAYRER, M.D., C.S.I.

Mr. S——, [illegible] few years in Bengal, during which time he had enjoyed fair [illegible] at about 8 a.m.

He was driving in a buggy with a friend, when, observing [illegible] jumped out, without putting his foot on the step, to stop the horse, which was starting off at speed. He fell as he alighted, and was immediately afterwards picked up with a severe compound fracture of both bones of the leg a few inches above the ankle joint. There was a lacerated wound about two inches above the internal malleolus through which the tibia protruded. [illegible] two inches. The fibula was also fractured, but did not protrude.

On examining the wound it was found that the lower fragment of the tibia was comminuted, and the joint opened. There was considerable hæmorrhage, but no large arterial branch appeared to be wounded. The anterior tibial artery could be felt on the dorsum of the foot, but the posterior tibial did not pulsate. The saphena vein had been torn across and was hanging out [illegible] pulse was small, feeble, and rapid.

[illegible] much injured and denuded of the periosteum, I removed the most seriously injured portion, about 1½ inch in length, and then increasing the opening by a small vertical incision, I returned the bone, dressed the wound, and placed the limb in a splint [illegible]

[illegible] tolerably well, but his pulse is feeble and rapid, shewing that the shock still continues; stimulants and warmth and beef-tea had been administered during the day. Very careful examination had been made, but no injury of any other part of his body could be detected. He was perfectly conscious, and said he knew there was no other injury, and described the accident [illegible] ground. A [illegible] was ordered at bed-[illegible].

[illegible]—He [illegible] applied frequently to prevent bleeding. His pulse is still feeble; the surface of his body cold: there is no proper re-action. He [illegible] and pulse [illegible] by a simple enema; [illegible]

[illegible] He has been sick frequently, but he is free from pain, and is rational and collected. There is some tympanitis, and jaundice is setting in; the conjunctivæ are already tinged with yellow; pulse still depressed and rapid.

[illegible]—A restless night; [illegible] well marked; the whole body, but especially the upper part, is discolored; pulse rapid, but somewhat fuller. There is an attempt at re-action.

The wound looks as it did when first dressed; there is no [illegible] ordered stimulants to be continued in moderation. He is restless; abdomen tympanitic, and the breathing is rapid. I expressed my fears that he would not live long, to his friends.

5 p.m.—Much worse; nearly quite collapsed; breathing very rapid; skin cold, and clammy; deeply jaundiced; foot and leg of a deadly cold; great toe apparently in the point of becoming gangrenous. Stimulants, hot bottles, sinapisms over the heart.

The jaundice rapidly deepened, and the condition of collapse became more complete. He retained his consciousness almost to the last moment, and died at 8 p.m., that is, in 48 hours after the accident.

No [illegible] examination was made, but the cause of death was evidently the shock, which was most intense, and acting on the nerve centres, caused such suspension of innervation in the ganglionic system as to induce jaundice and ischuria, (I should have noted that no urine was voided or secreted after the accident), and apparently the formation of coagula in the right cardiac cavities.

The [illegible] prevention of jaundice is a somewhat [illegible] result of shock to the nerve centres in accidents of this nature, and I am not aware that it has been much alluded to by surgical authorities; but I have seen it before and also after capital operations, and I regard it as a most fatal symptom. The rapidity and intensity with which it comes on shew that it is not due to congestion of the liver or to obstruction of the ducts, but point to disordered innervation by which the natural metamorphic processes, that should go on in the blood, are seriously compromised, if not suspended. The condition of the patient in such cases as this is clearly one in which the nervous system is seriously injured, and those portions of it which govern the hepatic functions seem most of all to suffer.

It is more than probable that had this fatal shock not supervened, amputation would have been ultimately necessary. As it was, his condition was never such as to admit of the operation. He was seen in consultation by my friends and colleagues, Pro[illegible] and I went

NOTE ON FOURTEEN CASES OF CHOLERA TREATED BY HYPODERMIC INJECTION OF STRYCHNINE.

By [illegible] M.D., [illegible]

[illegible]

THE cholera hospital for patients from the city, (Peshawur), [illegible] September, and up to this date (14th October) 363 cases have been admitted, of which 180 have been fatal. An uniform plan of treatment has been followed, *viz.*, the saline plan known as Steven's saline treatment; and, considering that all the cases, or nearly all of them, were desperate ones, as natives will not go voluntarily to a cholera hospital until they are in the last [illegible] I [illegible] a very fair amount of success.

further details shall be sent to you for publication in a future number. I merely wish to bring forward a few cases treated by the hypodermic method of injection, in continuation as it were, of three published by Surgeon Christison in the Gazette of the 1st October treated with ammonia.

The solution of strychnine employed was $\frac{1}{20}$th of a grain, dissolved in 10 minims of rain water acidulated with one minim of dilute hydrochloric acid. The success was not encouraging, and as cases became more numerous, the hypodermic method was discontinued, and the saline plan persevered in.

I.—Suntoo, syce, admitted from artillery lines in a state of complete collapse; injected hypodermically with the strychnine solution three times at intervals of four hours; re-action partially established. Death from anæmia three days after admission.

II.—Buksee, dooley-bearer, admitted on the 13th September; injected three times at intervals of four hours; re-action established and secretion of urine partially established. Died on the 20th, six days after admission.

III.—Membode, syce from royal artillery lines admitted on 13th September in a state of profound collapse; strychnine was hypodermically injected as a "forlorn hope;" the effect of the first injection was striking. Tetanic spasms were slightly visible, but the man got into a comatose state after the second injection, and complained of pain in the arm at the point of puncture. He passed urine the third day, and took food on the fourth day, but he remained in a weak sickly state, and at last a low form of typhoid fever set in, and he died of diarrhœa, &c., on the 30th. This case may be called a favorable one, and a cure from cholera, the low fever being a post hoc, and prevalent in Peshawur at this time of the year.

IV.—Gool Ahmed, coolie from the city, admitted on the 13th; injected three times; skin became warm, and pulse become perceptible, but he died of anæmia on the 19th, six days after admission.

V.—Dookee, syce from artillery lines, admitted on the 13th; injected three times; a stout-built man, was in a profound state of collapse; re-action established on the 14th; urine passed on the 15th, and recovery was complete on the 20th, seven days after admission.

VI.—Ghinow, dooley bearer, admitted on the 13th, not very profoundly collapsed; injected four times without much effect. Died on the 16th, three days after admission.

VII.—Mahomed Rajuck admitted in a moribund state on the 14th; injected twice, but without much effect, though it apparently preserved his life till the 16th, when he died.

VIII.—Lutchman, a sweeper from sudder bazar, admitted in a state of profound collapse on the 14th; was injected three times; re-action was established; pulse became perceptible, but urine was not secreted in spite of blister and diuretics, and he died on the 18th, four days after admission.

IX.—Goomanee, an old man, admitted from the city on the 14th; injected six times with the above solution of strychnine; re-action established on the third day; urine passed, and recovery complete on the 19th, five days after admission.

X.—Soobhan Khan, aged 20, admitted on the 18th; injected twice; on 18th once, on 19th re-action fully established; urine secreted, but diarrhœa of a bilious nature set in, and he died on the 25th.

XI.—Sooltan admitted from the city on the 18th; re-action and secretion of urine established after four hypodermic strychnine injections, recovery complete on the 29th, though he still remains weak, and subject to diarrhœa.

XII.—Rampaul, syce, admitted from sudder bazar on the 19th; injected three times; no re-action whatever was established. Died on the 21st.

XIII.—Mahomed Azeem, admitted from the city on 22nd September; injected four times; re-action came on the third morning; urine passed, and he made a complete recovery by the 2nd October; left the hospital of his own accord.

XIV.—Shewbuksh, admitted from the city on the 22nd; was in a state of profound collapse; injected three times; re-action established on the 24th.

REMARKS.—In looking over these cases it must be borne in mind that they were all of the most virulent type of cholera; recovery seemed and was almost hopeless, or such a violent remedy as the injection of $\frac{1}{20}$th of a grain of strychnine would not have been resorted to. I cannot say I am satisfied with the plan of treatment; however, it did not injure the patient in any way, and in most cases re-action was established and death did not occur in the stage of collapse as has been so common in the late epidemic here. In publishing these cases I do so with a view to show the value of others in proving others to judge of the treatment.

CASES OF AMPUTATION AT THE HIP-JOINT.

BY DR. BAILLIE,

Surgeon, Calcutta Native Hospital.

I.—AMPUTATION BY THE CIRCULAR METHOD FOR INJURY: CARBOLIC ACID NOT USED; DEATH ON THE TWENTIETH DAY FROM HÆMORRHAGE.

NOGENDRONATH DUTT, a boy aged 7, admitted 22nd August, 1867, having fallen from the roof of a high house, and sustained compound comminuted fracture of the right thigh bone at its upper third, which protruded nearly two inches from the wound, the surrounding soft parts being much bruised. After waiting a few hours till re-action had set in, amputation at the joint was performed under chloroform; the operation was well-borne, and progress good till the fifth day, when diarrhœa occurred, and the stump opened out; however, this in a few days became filled with healthy granulations, which were guarded by warm dressing. The pulse, however, which was very rapid on admission, never fell below 150, although he was well supported and had tonics. After this he went on fairly, the wound granulating and contracting till 9th September. Diarrhœa with fever then set in, and continued more or less till 11th September, at 4½ a.m., when, whilst straining at stool, arterial hæmorrhage occurred from the bottom of the wound, but not in a jet; the bleeding was speedily arrested, not more than four ounces of blood having escaped; the little patient, however, rapidly sunk, and died a little before six o'clock the same morning. *No post-mortem* examination could be obtained.

REMARKS.—The injury to the muscles surrounding the joint was so great in this instance, that I was induced to adopt the circular in preference to the flap operation, so as to enable more of the muscular structure, and less of the integument to be removed; had this alternative not been called for, probably the boy's chances of recovery would have been greater; and they would also have been still more increased, had carbolic acid been applied at the time of the operation, as I believe thereby adhesion might have followed, and the long suppurating process been averted.

II.—AMPUTATION BY ANTERIOR AND POSTERIOR FLAPS FOR DISEASE; CARBOLIC ACID FREELY USED; STUMP HEALED IN SIX WEEKS; DEATH FROM EXHAUSTION, THREE DAYS AFTER A SLIGHT ATTACK OF CHOLERA.

BECHARAM BAGH, an emaciated Hindoo lad, aged 16, was brought to the hospital on 12th August, 1869, by his mother, who immediately afterwards decamped, thinking probably that his case was hopeless; and certainly the poor boy's appearance justified her fears. He was suffering from a large osseous tumour of the left leg, its greatest circumference just below the knee being 26 inches; the entire thigh also was much increased in size; the plate taken from a photograph by Mr. Rust, of the Calcutta Photographic Company, hardly gives a fair idea of its



dimensions, the part having been out of focus; it was hard, and large distended veins were seen meandering tortuously over its surface, giving it a most malignant aspect; and, indeed, the history and period of the growth (nearly eight months) tended to confirm the view of its malignancy; the accident that originated the disease was a slight one. Whilst walking the left foot got into a hole, and he fell upon his left side, the limb being slightly twisted under him. Soon after he felt a severe pain about

[illegible] wound, which was then brought together by iron wire sutures, and the whole stump covered with lint soaked in carbolic oil.

[illegible] was very low, pulse small [illegible] was the case when he operated, so [illegible] was also very scanty.

19th.—Pulse and breathing still very rapid, but aspect [illegible] the sutures [illegible] a little, and a few [illegible] was removed, and a small [illegible] quantity of [illegible] with carbolic acid, [illegible] causing a burning sensation to such parts of the hand with which [illegible] was covered by strips of adhesive plaster, and air excluded by application of warm dressing mixed with carbolic oil.

[illegible] was quite [illegible] respiration 26, stump healthy looking. From this date there is nothing to chronicle, save that the patient gradually, from day to day, gained strength [illegible] with no [illegible] except occasional slight attacks of dysenteric diarrhœa, which were easily checked by small [illegible] and opiates, with [illegible] extract, to be [illegible] afterwards at different times, pepsine, syrup of lactate of iron, and opium: the latter alone seemed to suit him very well.

On the 30th September, being the day of the quarterly meeting of the governors of the hospital, the patient was seen by Dr. John Murray, the Inspector-General; the stump was then quite solid, and healed, save a small sinus (at the outer extremity of the [illegible] incision), which could but just admit an ordinary probe, and from which about half a drachm of healthy pus escaped daily. Pulse 84, at which figure it had been for the past three weeks.

On 3rd October, all having gone on well previously, he had several copious conjee-like stools, but unaccompanied by cramps or vomiting; this purging was checked in the after part of the day, and in the course of the next two days, the stools, although still watery, became smaller in quantity, and began to assume a yellow tinge, and I hoped he had got over the attack, but during the night of the 5th, without any increase of diarrhœa, he became very faint and gradually sank, dying early on the morning of the 6th October, just seven weeks from the date of the operation.

A *post-mortem* examination was made the same morning; all the viscera were in a healthy condition; the stomach, however, was much distended with a grumous fluid, and the gall bladder with bile, but the examination disclosed positively nothing to account for death; the stump was cut into, and found solid throughout, even the acetabulum was quite filled in, and the little sinus mentioned above, which admitted only the small blow-pipe [illegible] in dissecting cases, was traced to the back of its outer edge.

The whole of the amputated parts were sent to the Medical College Museum for examination, but owing to a misadventure, the soft structures were unfortunately not examined, so that Professor Ewart could but report upon the osseous part of the growth, which he considered to be of the nature of osteo-sarcoma.

[illegible] In this case nothing short of the removal of the limb at the joint would, I believe, have offered a chance of recovery, and the correctness of this opinion may be said to have been confirmed by the result of the operation; for so far as the wound of the amputation was concerned, nothing could exceed the steady progress of the healing process, unattended [illegible] by a single [illegible] during its whole period, no fever, hæmorrhage or other adverse incident having occurred. Then as to the death, there can be but little doubt that in consequence of the low state of the boy's health, to which his disease had brought him, combined with the demands upon his strength, had expended so much of the vital force, as to leave an insufficient amount of it, to enable his system to rally from the shock it sustained from the attack of cholera, slight [illegible].

It is singular that in this, as in the successful cases of hip-[illegible] reported by Drs. Payren and Partridge, the age of the patient was 16.

CONTRIBUTIONS FROM THE MITFORD HOSPITAL, DACCA.

By ASSISTANT-SURGEON, H. C. CUTCLIFFE, F.R.C.S.

ENLARGED SPLEEN CONVERTED INTO A HÆMATOCELE, WHICH WAS PUNCTURED: RECOVERY.

NAIM RAM, aged 19, entered Ward 1 came to the Mitford Hospital, May 19, 1869 with a remittent fever and an enlarged spleen. He was a weak, large and muscular boy, but had good features. He states that he has suffered from fever occasionally for [illegible] months. About 10 or 12 days ago, he first noticed a swelling in the left side of his body under the ribs. The swelling was painful for two or three days by a very acute pain across the left hypochondrium. The tumour occupies the ordinary position of an enlarged spleen, which it closely resembles on examination. It was hard, even, and free from tenderness.

24th May.—The tumour to-day felt more like a big cyst containing fluid than a solid spleen. The edges of tumour reached as far as the [illegible] of the epigastric and umbilical regions, towards [illegible] the ribs, and [illegible] as a curved line across the upper part of the left lumbar region into the left lumbar region. There was no jaundice or edema. He was ordered lycium (rusout) mixture three times a day, and unguentum hydrarg. bimiodide to the tumour.

28th.—The tumour was become more distinctly prominent below the ribs; it clearly contains fluid; it was punctured; several ounces of dark fluid blood escaped, evidently old blood with [illegible] drawn out; there was no pus. The [illegible] plaster [illegible] several [illegible] and the [illegible] was [illegible] and said that the fluid which escaped burnt him very much.

29th.—Fever has come on with pain in the abdomen; he now lies on his back with his knees drawn up, his abdomen is hot, tender, and tympanitic.

30th.—Abdominal symptoms less distressing; the bandage afforded great relief; the tumour is subsiding, and there is no discharge.

2nd June.—All pain and tenderness have gone; the abdomen is flaccid and soft; the only remains of the abdominal tumour is an [illegible] fullness below the ribs in the splenic region. Discharged on the 8th.

RESUMÉ.—On admission nothing more than an ordinary enlargement of the spleen could be detected. In five days fluctuation was distinct over the whole of the enlarged spleen. On the ninth day it was punctured below the ribs, nothing but blood escaped: symptoms of peritonitis appeared the following day, but quickly subsided. Eight days after it had been tapped, nothing of the tumour could be felt.

HYDROCELE AND HÆMATOCELE EXISTING TOGETHER AS DISTINCT CYSTS WITHIN ONE TUNICA VAGINALIS IN WHOSE CAVITY HAD BEEN DIVIDED INTO TWO PARTS BY A SEPTUM.

AMEER KUREEM, aged 70 years, shop-keeper, residing in Dacca, was admitted into the Mitford Hospital on the 21st July, with a painful swelling of the left testicle.

The patient, a healthy old man, states that for two years past he has had a hydrocele of the left testicle, which, however, has never been in any way operated on, and has never caused him any pain. Eight days since, when sweeping in a hut raised about four feet from the ground, it gave way and he received a severe blow from a bamboo over the left groin, and lower part of the left cord. This blow was followed immediately by acute pain about the external ring, and swelling in the scrotum. Both the swelling and the pain continued to increase for eight days, when he came to the hospital.

On admission, a large ovoid tumour in the left side of the scrotum was observed; fluctuation was distinctly perceived, and it was surmised that an effusion of blood had occurred into the cyst of an old hydrocele. There was great tenderness on pressure over the upper part of the tumour, where much hardness was perceived to extend over a circumscribed area, and in such a manner as to suggest the possibility of an inflamed and swollen testicle being there located.

22nd July.—The fluctuation being distinct at the lower part of the tumour, a trocher was introduced, and about one pint of clear serous fluid perfectly transparent, and free from all traces of blood, was withdrawn. A circumscribed hardness remained still at the upper part of the scrotum, and the condi-

tion of the parts now suggested the idea that the fluctuating tumour had been an *encysted* hydrocele, and that the hardened mass remaining at the upper part of the tumour was the testicle inflamed and swollen from local injury.

26th.—The pain in no way has diminished; the hardness and swelling remain unchanged. Bichloride of mercury and iodide of potassium mixture; leeches to ease the pain.

27th.—The pain is very severe: there is no change in the character of the tumour. Through the upper part of the scrotum I made an incision down to the tumour, and then cut into it, and evacuated about six ounces of dark clotted blood; no fresh hæmorrhage occurred. By passing the finger into the hæmatocele, for so what I had cut into proved to be, I found that it consisted of a cyst situated over the anterior surface of the epididymis (globus major) and testicle, and that the cyst did not extend to the lateral or under surfaces of the testicle. Upwards the cyst reached along the cord for about one inch above the epididymis, and was there limited. The cyst seemed to have been formed immediately over the tunica albuginea. The hydrocele cyst was now clearly to be made out, as it was partially again filled with fluid. Its situation was limited above by the hæmatocele, and was confined to the inferior and inner surface of the testicle. From these surfaces it hung pendulous downwards. The two cysts were thus clearly distinct from one another, and each was limited to a portion only of the surface of the testicle, which organ was situated above the hydrocele and behind the hæmatocele.

28th.—The laying open of the hæmatocele has given him relief from all pain; has had no hæmorrhage, fever, or other bad symptom.

5th August.—Has had no more pain; the cavity of the hæmatocele is fast closing, and is now discharging healthy pus; the hydrocele is very slowly re-filling with fluid. Its relative position is now clearly demonstrable to be as I before described it, *viz.*, confined to a small part only of the anterior surface, some of the outer, all the lower, and a little of the posterior surface, of the testicle. The cyst of the hæmatocele was entirely confirmed to the upper and anterior portion of the testicle, and was probably the upper part of a septal division in the tunica vaginalis, into the lower part of which the hydrocelic fluid had been effused.

10th.—The hydrocele is slowly re-filling; the sac of the hæmatocele is granulating, contracting, and closing.

16th.—Discharged.

REMARKS.—The hæmatocele was not distinct from the cavity of the tunica vaginalis, for the tunica vaginalis testis formed the posterior wall of the cyst, which, however, was clearly limited to the upper portion of the cavity of the tunica vaginalis. Between the cyst of the hæmatocele and that of the hydrocele there existed a distinct wall or septum, and looking to the fact that the hydrocelic cyst in its connexions generally corresponded with the lower part of the cavity of the tunica vaginalis, it seems to me that the wall between the two cysts was a septum which had formed in the cavity of the tunica vaginalis anterior to the commencement of the hydrocele, and had divided that cavity into two parts, of which the lower had become greatly enlarged from the accumulation of the serous fluid which had there formed a hydrocele, and that the upper portion of the cavity had been recently converted into a hæmatocele by the sudden effusion of blood which had been poured into it from some vessel ruptured by a blow. Having laid open the cavity of the hæmatocele, I thought that it would be prudent to leave the hydrocele to future treatment, and this was accordingly done.

PRIMARY AMPUTATION OF THIGH; RAPID RECOVERY UNDER ANTISEPTIC TREATMENT.

BY CHARLES W. WAYLEN, M.R.C.S., ENGLAND, &c.,
Surgeon, E. I. R., Jubbulpoor Line.

THE *Lancet*, in its issue of August 14th, while reviewing the opinions expressed by Mr. Nunneley during the course of his address in surgery at Leeds on the "antiseptic treatment of wounds," very justly observes "that, on the septic-germ theory the success of the treatment would depend entirely upon the precise observance of many precautions." If by such observance of precautions, not many, but few and simple of execution, we can act with the certainty that a definite result will follow, no further arguments or proofs can be required to establish the immense superiority of such treatment over any subject to influences not to be prevented, be they known or unknown, whether atmospheric or telluric, dependent on constitution, mental, or physical, habits of life, age, or mode of injury.

Mr. Nunneley bases his disbelief in the benefits of the antiseptic treatment on the fact that freely exposed stumps have also healed up "readily and well" without any covering upon them. That the two plans of treatment are, as he says, "wide as the poles asunder" is indeed most obvious, but are they not those respectively of cure and prevention? if so, which of the twain is better? True, by the most assiduous attention to a freely exposed stump we may, perchance, happily remove or remedy any morbific action induced or caused by such exposure, but, in the hands of many, carbolic acid has proved an absolute safeguard against the ingress of any poison germ, a sure preventive of any such morbid action, and an agent the careful use of which renders us independent of all external influences.

In my own experience I have found carbolic acid not only powerful to prevent the incursion of suppurative infection, but to stop and alter septic action set up in a previously unprotected wound. The following notes of a recent case very satisfactorily illustrate its primary preventive action:—

Kwalee, a Khol woman, aged 45 years, the mother of five children, was, for four months preceding her admission to hospital, one of a crowd of some 1,500 beggars congregated at the Sutna station on the Jubbulpoor line of railway, where they have been barely kept alive by a small daily dole of grain; this was only given to those who were too weak and infirm to be employed on the regular relief works, such as making tanks, roads, &c. On the 22nd July, she, with three of her children, had crept for shelter from the heavy rain, under a truck in the station yard; there was occasion to move this truck: this was accordingly done by an engine. On seeing it move she, instead of remaining quietly between the rails, and so escaping injury, first hurried out her children, and then, whilst attempting to creep out herself, her left leg was caught by the wheel and completely smashed. She was brought to me about an hour after the accident occurred in a very low state of shock, from which, when with difficulty roused, she only as if mechanically asked for food. Pulse very small and weak. Both bones of the left leg were broken and splintered in several pieces, the patella was wrenched from its position, the lower part of the femur laid bare, and all the soft parts of the leg and thigh as high as its middle were lacerated and crushed out of all shape. Her weakness and prostration were excessive, both from the shock itself and the long course of semi-starvation that she had been enduring.

With as little delay as possible she was put under chloroform, and I amputated with very scanty anterior and posterior flaps at the junction of upper and middle thirds of the femur. Two arteries were tied. The cut surfaces were then quickly and carefully smeared with carbolised oil (1 part in 4); the flaps were then accurately brought together, and united with ten sutures of silk saturated with carbolised oil. The wound was covered with a double fold of lint, previously soaked in carbolised oil (1 part in 12), overlapping the end of the stump by three inches on all sides, the edges being included in the folds of a firm bandage embracing the whole of the stump; over the double fold of lint another single strip was laid also saturated with the oil. Immediately after the effects of chloroform had passed off, she was given 15 drops of aromatic spirit of ammonia with 20 drops of laudanum. To be given alternately strong venison soup and milk, of each 1 oz. every hour. The opiate to be repeated in the evening.

23rd.—Had three hours sleep at night; pulse still small and feeble; no sign of fever; complains of pain in the wound. All the dressings to be left *in situ*, the outer piece of lint to be smeared with the carbolised oil every four hours. The opiate draught to be continued every four hours. Diet: soup and milk alternately every hour, with rice twice in the day.

24th.—General symptoms the same as yesterday; complains of great pain in the wound; no inflammation or tension in the stump; carbolised oil, opiates, and diet to be continued as before.

25th.—Had a tolerably good night, pain less in wound, pulse feebler and firmer, but not increased in frequency; no inflammatory swelling, nor abnormal heat in stump, at her own request she was given bread and dhal, instead of rice: these with soup and milk to be given in three meals during the day. Opiate draught to be given only at bed time. Under this treatment she continued steadily to improve. On the 28th the whole of the dressings were removed. The wound was found through more than half its extent, the rest was perfectly clean and healthy. Fresh dressings of the same kind to be applied. The outer piece of lint to be renewed as morning.

On the 10th day after operation the wound was healed with

children died of chronic dysentery a few days after her admission to hospital; her own emaciation was horrible to witness; had her small residue of vitality been called on to support her under inflammatory or suppurative action, I believe she must have succumbed.

When, on such an occasion as the annual meeting of the [illegible] the antiseptic treatment of wounds, it behoves every one who has tried it to put on record his individual experience, that we may, by accumulation of proof, establish the fact of its being [illegible] surgery.

Whether the septic germ theory be correct or otherwise I will not here argue, but, be the *modus operandi* of carbolic acid what it may, I for one am content to use empirically

ABDOMINAL ANEURISM BURSTING INTO THE LEFT PLEURAL CAVITY

By ASSISTANT SURGEON F. MORRIS MACKENZIE.

[illegible] CELIZE, by birth a Portuguese, aged 33, formerly Quarter-Master of the S. S. *Mooltan*, was admitted into the Presidency General Hospital on July 12th, 1869. He was then intoxicated, but gave a history of having been well until, two years previously, when he had passed blood by the bowels. No history of fever or dysentery could be obtained from him. He stated that the tumour he was suffering from commenced five years ago, when he first saw and felt a small lump in the left iliac region;" this slowly increased until [illegible] ago, when he suddenly felt pain in the epigastric region, and the tumour appeared for which he was admitted. On examination, there was found a large [illegible] pulsating from the epigastric region to the left side, and about a half [illegible] the level of the anterior surface of the body. It was moderately fixed and situated in the epigastric region between the divergence of the ribs, immediately below the ensiform cartilage. It was about the size of a *bael* fruit, round and regular, with the exception of the upper border on the right side, where there was a [illegible] The tumour pulsated synchronously with the heart's action, and an expansive impulse was conveyed to the hand when placed over it. The inferior border of the tumour could be felt through the walls of the abdomen for some distance. On attempting to auscultate it, the stethoscope was driven with such violence against the ear that nothing could be heard. The heart's action was normal, and the viscera healthy; urine contained no albumen, and was of fair spec. gravity.

He [illegible] but did not suffer from sickness, or any thing else. He was kept quiet in bed, sedatives were ordered for him, and he [illegible] on the 22nd August. On the 24th, when the pain and jerking became worse; the tumour was now visibly larger, and he began to suffer from hæmoptysis, [illegible] and expired.

Post Mortem Examination 25th August, 1869, [illegible] the left pleural cavity [illegible] The lung was completely collapsed, and the pleural cavity contained a large mass of clotted blood. The aneurism occupied chiefly the [illegible] and on the right side nearly to the [illegible]

[illegible] much dissection. On removing it, the bodies, pedicles, transverse processes, and portions of the [illegible] canal. The aneurism was adherent superiorly to the diaphragm, [illegible] one side with the left pleural cavity, and on the other with the aneurism.

The sac of the aneurism was very thick anteriorly, in some parts an inch or more, and consisted of layers of fibrine. Heart [illegible] amyloid.

CASE OF SMOTHERING.

By [illegible], A.M.M.D.

Assistant Surgeon, 6th N.I.

THE following case is rather unusual, and as I cannot find its counter part in Taylor, I think it worthy of record:—

On the 27th of October, 1869, the body of a female, aged about 25, was brought to me for examination with the following history. She and some other females had gone on the [illegible] to dig up clay from under the bank of a river. While doing so the bank gave way, and buried two of them: one completely, and the other up to the shoulders. The rest of the party ran to give the alarm in the village, about half a mile off. After about half an hour's delay the villagers came to the rescue. One of the women who had not been completely covered was disinterred alive, and has suffered no bad consequence from her mishap. The other, the subject of notice, was found dead under the sand and mould.

The body was [illegible] protruding; head and shoulders more livid and decomposed than the lower part of the body; skin and [illegible] mould; no wound or bruise anywhere; body robust and well nourished; scalp infiltrated with sanguineous serum; skull entire; brain not examined; mouth filled with sand and earth; tongue [illegible] covered with a layer of the same; [illegible] stuffed with mud; larynx contained a large quantity of earthy sand of finer grain; mucous membrane acutely congested, of a bright red colour; trachea, bronchi, and larger bronchiæ filled with still finer and moister sandy matter, which did not penetrate into the smaller sub-divisions of the bronchiæ; lungs uniformly and intensely congested; heart flabby, dilated [illegible] filled with a recently eaten meal of rice, &c.; a few streaks of dirt on the mucous membrane near the cardiac orifice; liver congested; kidneys more so; spleen in a state of chronic enlargement; intestines &c., healthy.

[illegible] the expression. The *post-mortem* appearances were such as [illegible] but I frankly [illegible] gasps of aspyxiation could have sucked the debris so far down the air tubes, and was somewhat surprised to find a small quantity of it in the stomach. I have examined at least two cases of drowning in muddy water, and found mud in the air passages and œsophagus, but it is much more difficult to realize the passage of dry sand and earth so far in such quantities, and in such circumstances.

CASE OF SUFFOCATION.

By [illegible], Assistant Surgeon, 26th Cameronians.

No. [illegible], Private [illegible] Cameronians, aged 28, when in his bed in the Dalhousie Barracks, Fort William, on the night of the 8th November, 1869, about 20 minutes past 10 o'clock, was discovered by the man lying in the next bed to him to be breathing loudly and with great difficulty, as if there were some obstruction about the lower part of the trachea. He was at once removed to the dispensary in Fort William, where he died in about 15 minutes, and was found dead on the arrival of the medical officer. At the *post-mortem* examination on the 9th November about nine hours after death, several small pieces of potatoe were found in both bronchial tubes, where they sub-divided into small branches. There was great œdema of the glottis, no doubt from the irritation caused by a foreign body. The epiglottis was remarkably

large, and so thickened in structure that it probably performed its functions very indifferently. The trachea and bronchial tubes contained matter similar in character to the contents of the stomach. Lungs greatly engorged with blood. In the stomach were found several small pieces of potatoe of the same character as those discovered in the bronchial tubes. Assistant-Surgeon Cunningham, who was in the dead house at the time of the *post-mortem* examination, verified the nature of the foreign bodies by means of the microscope. It appeared that the deceased had drank some beer and also rum in the course of the evening before retiring to rest. He had been sick and vomited when in bed; and about this time, no doubt, portions of the contents of the stomach passed down the trachea into the bronchial tubes, thus causing asphyxia.

The Indian Medical Gazette.

Acknowledgments.

Lancet.
British Medical Journal.
Fifth Annual Report of the Sanitary Commissioner.
The Practitioner (October.)
Calcutta Journal of Medicine (July.)
Medical Press and Circular.
Records of the Leprosy Society of India (Part 4, 1869.)
Canada Medical Journal (September.)
Epidemic Cholera in the Bengal Presidency. By Dr. Bryden.
Treatise on Spasmodic Cholera. By Dr. R. O'Connor, Assam.

Notices to Correspondents.

Communications have been received from

DR. FATHER, C.S.I.
DR. FRANCIS DAY
DR. BATTLIE.
M.D., *Madras.*
INQUIRER, Punjab.*
Assistant-Surgeon S. COULL MACKENZIE.
DR. T. D'O. PAREIRA.†
Apothecary J. C. LEITE.‡
Assistant-Surgeon J. TAWCUS.

CHANGES OF ADDRESS.

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Technical expressions should be so distinct that no possible mistake can be made in printed form.

Neglect of these simple rules causes much trouble.

Communications should be forwarded early in the month as possible, as delay must unavoidably occur to their publication.

Business letters to be addressed to the Publishers: Messrs. Wyman & Co., and all professional communications to the Editor, direct.

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

* We can reply for certain that Dr. Bryden knows not the source of tables himself, but whether the tendency to abstract, of which constitute the 5th Report of the Sanitary Commissioner, are written as suggested by Dr. Bryden, we are unable to say. You can read the Review if you like.

† No.

‡ This is the only communication received.

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

THE PHYSIOLOGICAL ACTION OF QUININE.

WE re-print below an extract from a Review in *The Practitioner* for August last, of das *Chinin als Antiphlogisticum*, Inaugural Dissertation der Med. Facultät zu Giessen, Von Adolph Martin, bearing upon the influence which the disulphate of quinine is supposed by some to possess in modifying, mitigating, or preventing the inflammatory process:—

While Binz and Scharrenbroich had produced a very large amount of evidence apparently proving that quinine, and a number of other remedies, have specific influence in checking the vital amœboid movements of the white corpuscles, it was left an open question by the former *Ueber das Wesen der Chininwirkung*, Berlin, 1868, whether or not this influence extended to actual prevention of the passage of the corpuscles through the vascular walls in inflammatory conditions. Dr. Martin addressed himself to the consideration of this further question. His experiments on frogs were conducted on the model of Cohnheim's famous researches; the animals being paralysed with curara, the mesentery was drawn through a wound in the abdominal wall, and spread out upon perforated slices of cork for microscopic examination. In a preliminary series of studies the author thoroughly familiarized himself with the phenomena, first described by Cohnheim, which occur when the inflammatory process is allowed to develop itself unchecked. He then began comparative experimentation: two frogs of equal size being simultaneously paralysed with curara, in one the inflammatory process was allowed to run an uncomplicated course, in the other quinine was injected subcutaneously; every stage of the subsequent changes was in each case sedulously watched. This double experiment was repeated with several pairs of frogs; and, besides this, the effect of directly painting the mesentery with a solution of quinine was tried in several instances. The results were very decided. In the animals not treated with quinine the characteristic dense agglomeration of white corpuscles along the walls of the vessels was strongly marked, and the migration processes went on freely; simultaneously there was notable dilatation of the vessels and slackening of the stream. In the frogs treated with quinine, all these phenomena were invariably much more feebly developed, sometimes they were only present in trifling degree. In the sixth experiment, the direct application of quinine to an already inflamed mesentery, in which extensive migrations had already taken place, produced evident and notable changes in the white corpuscles; these did not cease to migrate, but became dark, granular, and indented, and lost their vital movements as soon as they had passed outside the vessels.

Besides these experiments, Martin made some observations on dogs, in order to test the assertion of Binz and Scharrenbroich as to the effect of quinine in diminishing the number of white corpuscles. As with the frogs two animals of equal size were simultaneously and comparatively experimented upon. The result of this research was very remarkable, the difference between the numbers of white cells being far too great and too constant to have been the result of accident, and, moreover, it was evident that, as the action of a single dose of quinine passed away, the white cells began to multiply again with great rapidity.

The final series of experiments made by Martin were directed to the novel object of testing the cause of events in parenchymatous organs; and, after expending much trouble, he succeeded in following the cause [illegible] of the simple and the modified inflammatory process in the liver of the frog. Here, again, the effect of the quinine was unmistakable.

The general results of the whole inquiry conducted Martin to the following conclusions:—1.—Quinine limits the pathological migration of the blood corpuscles into the tissues of the membranous and parenchymatous organs exposed to the air, both when it is given in the ordinary way and when it is immediately applied to the part. 2.—It [illegible] this effect, [illegible] impairing the [illegible] of the [illegible] vessels, [illegible] depriving the [illegible] of their normal [illegible] and [illegible] the [illegible] of the vessels. 3.—Quinine acts as an [illegible]

[illegible] Mercury [illegible] and the [illegible] of [illegible] [illegible] [illegible]

tice is allowable in England, and there it is not cruel; but in India it is different. To invite a soldier or sailor to take service when the traffic is good, and then to discharge him when it is bad, is to spoil the purpose of many men's lives, and to fill the country with loafers. The Company has as yet no pension list, but this should make superintendents all the more tender in discharging men who have got worn out in the service. We believe the East Indian Railway to be the most intelligently managed railway in India, and we feel sure that to have abuses remedied, it is only necessary to point them out.

EDUCATION OF NATIVE DOCTORS.

A VERY important class of lectures have recently been instituted at the Medical College, which will tend much to improve medical education. The Government have sanctioned an arrangement by which instruction on Chemistry and Medical Jurisprudence is to be provided for the students of the first, or military, and the apothecary or Bengali classes; lectures on the latter subject have already commenced. If the class becomes permanent, of which there can be very little doubt, each pupil of the Bengali class will have to pay a small fee for attendance, as is the rule in the midwifery class that was established for them last year. One rupee is charged per annum for attendance on these midwifery lectures, and since their commencement they have been largely attended. The propriety of this fee has been questioned, but we think it ought even to be made higher; it is only fair that the men educating themselves for general practitioners all over the country should now be required to contribute something towards the expenses of their education. The military class of Native Doctors, on the other hand, being educated solely for duty in military and civil hospitals, are supported by Government, and receive their education without any payment.

CESSATION OF SMALL-POX IN IRELAND.

SMALL-POX has temporarily disappeared from Ireland; stamped out the authorities hope.

The secretary of the Poor Law Commission reports in September,—"the returns of the Registrar-General for the quarter ending 30th June last, contains no death from small-pox; and the dispensary medical officers have reported no case of small-pox as having occurred since June last."

Dr. Cameron, of Dublin, states that during the ten years ended in 1841, 58,000 persons died from small-pox in Ireland. During the decade ending 1851, deaths numbered 38,275, and in the following ten years 12,727. Thus for some years previous to the introduction of the compulsory Vaccination Act in 1863, the annual mortality from the disease was over 1,000. In the following years the decrease has been well marked. In 1864, the number of deaths 854; in 1865, 347; in 1866, 187; in 1867, 20; in 1868, 19; in the first quarter of 1869, 3; in the second quarter none.

Whether or not, says the secretary, "small-pox remains in the country, and may be expected to break out under less favorable circumstances, it is quite clear that every part of Ireland is at all times exposed to the introduction of the disease, either accidentally or by design, and, therefore, that the only security lies in a steady maintenance everywhere in the protective means afforded by vaccination."

IMMUNITY OF A MONKEY TO STRYCHNINE.

SURGEON THEOBALD RINGER, of the 7th Cavalry at Nowgong, communicates an attempt to poison a Lungoor (presbytis entellus) with strychnine. One grain was concealed in a piece of cucumber, which the animal eat; after waiting some time and finding no effect produced, three grains were given in the same substance, and the monkey appeared to relish the meal.

Afterwards some cyanide of potassium was mixed with sugar and placed between pieces of bread, but on smelling, the animal threw it away, and nothing would induce him to touch it.

To test the strychnine, which had been some time in his possession, Dr. Ringer administered three grains to a dog; in twenty minutes the usual symptoms commenced, and it died in forty minutes after swallowing the poison.

We know there are many vegetable poisons that act very differently on the lower animals to their effects on man. For instance the immunity of pigeons to opium is pretty well established; goats can eat tobacco in large quantities, and rabbits can be fed on leaves of belladonna, stramonium, and hyocyamus without detriment; but the toleration of this monkey to strychnine is novel. We have not yet been able to gather any information on the subject beyond a few lines in a local paper, in which it is remarked of a mischievous monkey,—"a druggist tried to poison the brute, but could not, as it seemed to eat all sorts of poison with impunity."

We hope shortly to hear the results of other experiments; but we should be very glad to hear more on the subject from any officers who would take up the question.

MEDICAL EDUCATION AT DISPENSARIES.

THE class of students attached to the Umballa Dispensary reassembled for winter work on the 1st October with an opening lecture by Dr. Bateson, the Civil Surgeon. Dr. Gray, Inspector-General of Prisons, was present. This is the seventh season this class has been in operation. The students are sons of respectable people of the district, who are subsidized by monthly sums drawn from local funds. There are two hakeems in the class; and one hakeem of the city, after studying for two years, has become superintendent of vaccination for the district. One of the old students is now engaged in private practice.

When sickness breaks out in a neighbouring village one of the advanced students proceeds there with suitable medicines, and one or more attend at the district fairs. At the great Thanesur Eclipse Mela of last year, these students were a feature of the place, as with a scarlet band round the right arm, they were distinguished as doctors.

Recently, when all the approaches to the cantonments and city of Umballa were in a state of surveillance, these students were on the cordon posts, and sent in intelligence as to the health of travellers and neighbouring villages. The students help in the daily works of the dispensary, and the older ones are clinical clerks, and keep the cases of the house patients. Dr. Bateson lectures in Hindoostanee on anatomy, medicine, and surgery. The Native Doctor of the Dispensary lectures on anatomy to the junior class of students, and the Police Native Doctor lectures on materia medica; books and other materials for medical study are obtained from the Agra Medical College. We hear there are similar classes at Kurnal.

It would be well if the system was more extensively encour-

[illegible] The [illegible] [illegible] [illegible]

When the rules were in force, which permitted men to be transported for shorter terms than life, the convict was an enormous expense to the State: "there is no comparison between the cost of keeping a convict in India, and of sending him to Port Blair;" and each one is calculated to have cost "not far under Rs. 30 a month, which cost, however, did not include the charges involved in taking him there."

There are now 7,000 convicts on the island, and it is considered that this number will be about the average jail population for the next six years, the annual importation being reckoned at about 700, and the decrease by death or termination of sentence, about balancing the incomings. At the end of that time, when many discharges of prisoners will have ceased, the subject will have to be considered de novo, as the incomings then will far exceed the outgoings, and the island, even as if 7,000 convicts were not enough in one place, could barely find place for much over that number.

"But 10,000 life convicts would be a very much more manageable charge than half that number composed of convicts sentenced for different terms, because in the former case, the same kind of treatment might be employed for all. All that would be necessary to ensure in their treatment would be—perfect security; a discipline sufficiently severe at starting to be necessary for the sake of example without being more severe; and, that they should be employed in such a manner as best to re-pay the cost of maintenance."

It may be stated that the present resolution of the Government to abolish transportation except for life, will not only effect an immediate and very considerable saving of expenditure, but will at the same time greatly increase the efficiency, and the deterrent nature of the penal administration of the country.

Conclusion:—The last section finishes the history of the jail system of India. The note concludes with an extract: a paper by a Mr. W. C. Bannerjee read at the National Association for the promotion of social science, held in June 1867. The extract is given "to suggest a contrast between the facts given in the precedings chapters, and some views that obtain in England concerning them;" the paper is described as a tissue of incorrect statements and rash representations.

Forming a short appendix is an article copied from an Edinburgh paper of October 1867, on "Miss Capenter and our mission work in India;" we extract few lines to shew the tenor of the whole, in reference to the facts she saw in India.

"Will it be credited that after a settlement of nearly a century and a half in India—after &c., &c., after we have sent out so many Governors, so many civil servants, so many missionaries; and latter India itself has grown so largely in financial wealth, and progressed so rapidly in material resources and powers, that at the present day criminals of all classes, old and young, male and female, are in our ordinary Indian prisons mixed and mingled together, rather like brute beasts, than human beings; one cell in many cases common to all; one treatment the lot of all; one common neglect and disregard the fate of all; no ragged schools, no reformatories, no classification of prisoners; no provision as to moral progressives; no education of any kind, either as to the world that now is, or as to the world that is to come." Such is the editorial trash commenting on some accounts of Miss Carpenter's writing, and which Mr. Howell most judiciously prints as an appendix, but otherwise passes it by, without remark.

Native newspapers on the subject of jails are sometimes amusing. In a recent paper the editor enumerates the hardships of prisoners, in their clothes being coarse, and not suited to keep out heat or cold; food the worst of its kind; the labor is too severe; prisoners soon lose absence of decency and modesty; and he concludes by enquiring, "whether out of the 20 crores of inhabitants of India, there is not a single person with friendly intentions towards the prisoners, to rise like the English Howard and effect their amelioration."

A comparison of native editors' ideas of what is, and of Miss Carpenter's account of what ought to be, the customs and practice of Indian jails would present some amusing features; the one dilates on matters with the absurdity of ignorance, the other works with an excess of philanthrophy, which causes her to see facts with a coloring that no common people can understand, and to give opinions on subjects with which she is practically unacquainted.

If we do err at all in the state of our jails, it is in the excess of over-care, and one great object should be, to make a prison a real one, and not like a club to live in. It is a cry here, as it is in Europe, that we treat our prisoners better than our rural population, but we will now conclude in Mr. Howell's last words:—"The Government of India and every Local Government have admitted that much remains to be done before the prisons in this country can be placed upon the satisfactory footing which has been attained within the last two or three years in England; but if blame is to be attached to short-comings, what has been effected should not altogether be ignored."

*** The conclusion of this article was written in May last, press of matter has hitherto prevented its publication: it will now complete the subject in the volume for this year. While it is in type, however, a new Resolution has been taken by the Government of India, the substance of which we extract from the *Friend of India* of 25th November:—

For years it has been a first principle of jail administration, in Northern India at least, that no prisoner should be allowed to work outside the prison, as English convicts do. Much labour has thus been lost to the country and punishment to the convict, solely because it was found difficult to establish a proper organization for the purpose. Once more, under a new Governor-General who has ideas of his own on the subject, the employment of convicts on extramural labour has been ordered. Something of the kind has become inevitable, since, two years ago, the transportation to Port Blair of any but life-term convicts was forbidden. If all the convicts sentenced to transportation were sent to Port Blair, there would be an annual importation of 4,000, and the settlement would be over-crowded. Moreover, apart from the expense of sending convicts there, each costs thirty rupees a month, and the settlement is popular. Henceforth, criminals sentenced to penal servitude for a shorter term than life are to be sent to the Central Jails. There all sentenced for more than one year will be employed in large bodies, under European supervision and rigid rules, on public works. Desperate characters and men of weak constitution will still be confined within the walls. For [illegible] will receive a remission of sentence not exceeding one month, and thus the inducements to escape [illegible] the experiment is well worth careful trial.

ASYLUMS FOR INEBRIATES.—Canada is following the States in providing these institutions. In the United States it is estimated that fully 80 per cent. of those treated in such Asylums have been reformed. The experience of them in England has not been so favourable.

Review.

Report on Cholera in the Bengal Presidency. By Dr. Bryden, [illegible] to the Sanitary Commissioner with the Government of India.

A [illegible] that has been [illegible] India during the last [illegible] we [illegible] the laws, which govern the circumstances of this disease. [illegible] to overcome the mystery, which has hitherto enshrouded this [illegible] Dr. Murray's able report on cholera, which has been closely followed by Dr. Bryden's work on the same subject. The contrast between these reports, however, is very remarkable; the one, the production of the head of the service in this Presidency, [illegible] the communicability of the disease and its consequences. Dr. Bryden, on the other hands, is a comparatively young officer, who for some years past has left the legitimate work of his [illegible] that these reports bear unmistakable internal evidence of the sources from whence they have originated. Dr. Murray's being the work of one "who has grasped and realized his subject, he [illegible] schools, that of experience." Dr. Bryden, on the other hand, considers that, however perfect our sanitary arrangements, [illegible] quarantine is powerless to stop the advance of the disease, [illegible] or from the early treatment of the disease; in fact, he has arrived at the melancholy conclusion that "the epidemic (cholera) is not under human control" (Page 233.)

As an argument in favour of these premises, Dr. Bryden casts in the teeth of his practising brethren the fact, that their efforts to stay, or cure the disease, have been unavailing; the [illegible] Dr. Bryden's propositions on the subject, when he asserts (p. 207) that "every one feels it would facilitate much the study of the phenomena of cholera, could we hold as a truth and not as a theory the constant or frequent presence of the cholera germ in the evacuations, and could we trace to this source the infection of localities or the poisoning of the water-supply. In this country *we* act upon the belief in the transmissibility [illegible] liability of our cantonments and regiments to cholera in its [illegible] It would surely have been well before penning a sentence of this kind, if our author had satisfied himself that a single cantonment, regiment, or man, attacked by cholera during the year, [illegible] by choleraic dejecta. But when we know that not a single European in India is free from such a mishap, and that we are all brought into constant and immediate contact with native servants, who for aught we can tell, have the instant before been [illegible] under these circumstances to assert that measures against the transmissibility of the disease "have been elaborated to the last degree," (if by this is meant practised) is to our minds an over-drawn statement, and the inferences deduced from data [illegible] men in this country and in Europe.

Let us, however, turn to Dr. Bryden's report, in order that we may ascertain the train of reasoning he has followed in arriving at these results. There is but little difficulty in this matter, for in his introduction he declares in unmistakable language the [illegible] of [illegible] Dr. Bryden remarks at an early stage [illegible] statistical facts, and from these facts alone, that the subject would fall systematically into order," and he gives force to this [illegible] "the study of cholera from an adequate, well-connected, and thoroughly authenticated aggregate of statistical data, can alone lead to accurate generalization, and to a due appreciation of the [illegible] tive language as this, it is somewhat startling to find Dr. Bryden in the same paragraph assuring us, that among "the various circumstances that have combined to retard our knowledge of the laws regulating epidemic cholera, none has exercised so deleterious an influence as the narrowness of view" of those who have studied the subject; for not only does he refuse, as in the above passages, to accept all but the statistician's results as to the matter under consideration, but he further lays down the law, that "he who holds that cholera is essentially [illegible] declines to entertain the doctrine of aerial transmission and reproduction in the soil, cuts himself off from what I believe to be the primary fact which must be received, before any adequate idea of the natural history of cholera can be taken in." Surely this savours somewhat of the prejudice which Dr. Bryden blames others for indulging in, and we would beg to bring the following maxim forcibly to his notice:—*qui æquum statuerit parte inaudita altera, [illegible]* The more so, because in truth, he appears really to doubt the breadth of his own doctrines; for when concluding his report, he informs us that after all, this "is but a small contribution towards the perfection of a system, the commencement of a study, which it will take years of research to elaborate." If we had only been prepared for this statement at the outset of our labours, we should hardly have thought it necessary to attempt to master the very abstruse matter contained in this report, but would have been content to wait in hope for the final results of Dr. Bryden's labours, in the meantime [illegible] least of the inferences which he has made, will be found available in the future, when the laws of the cholera of India shall have been framed into a system." We devoutly trust, however, that Dr. Bryden will bring his researches to a close within a reasonable number of years, for in the meantime cholera is annually carrying off a fearful number of victims.

We naturally turn to this report for information as to the communicability, or otherwise, of epidemic cholera; the former doctrine as we have before remarked is discarded to a great [illegible] tribution of epidemic cholera by human intercourse, and its multiplication in the human economy. No observer in this country has ever held exclusively the doctrine so much in favour at present, and, were we now to accept it as satisfactory and explanatory of the entire series of observed facts, it cannot be doubted that the progress of the study of cholera on a true, because a natural basis, would be indefinately retarded." With reference to this statement, we cannot but think Dr. Bryden is somewhat in error as to the views held by medical men in this country regarding the communicability of cholera; so far from none of them having accepted this doctrine, we find that, since 1817 up to the present time, a succession of Indian medical officers have consistently advocated this principle. In the Madras reports of the cholera of 1817-18, Mr. Kellie remarks that "in observing the progress of this dreadful malady, I am still more convinced, in my opinion, of its contagious nature. Does not the strikingly characteristic symptoms, the uniform [illegible] peculiar morbid poison? How then is this poison produced? Is it generated in the place, or is it brought into it? If generated and not contagious, its operation will be confined within certain limits to that place, or it may be diffused and dissipated by the atmosphere, when it may indeed float upon a gale, accompanying the seasons, or be connected somehow with [illegible] been carried in the face of the wind from village to village, [illegible] troops, from Nagpore to Jaulna, from Zaulna to Aurungabad and Mahgaum, from Aurungabad to Seroor, and from that to Bombay. It has progressively visited different villages between this and Hyderabad, at which place two officers have lately fallen victims to it. The one had constantly attended the death-bed of the other; and is not this contagion? If asked, why then do not all take it? we [illegible] We would [illegible] Dr. Kennedy's character [illegible] Dr. Hutchinson's work.

later time to the clear and positive statements on this subject put forward by Dr. Murray.

We notice this point particularly, because an assertion such as we have quoted from Dr Bryden's work if uncontradicted, might lead to false impressions among those unacquainted with the existing feeling of the medical profession in India, on this very important subject.

Nor can Dr. Bryden himself escape from the dilemma which his rejection of the doctrine of the extension of epidemic cholera from man to man places him in, for he is obliged to admit its substance, although enshrouding it by the mystery of language common to the fathers of medicines; he says "there is yet another group of cases which occurs during an epidemic period, and then only, which has not its origin primarily from an air-conveyed cholera. *This group is made up of cases of cholera transmitted from those who have been subjected to the choleraic influence, or from fomites impregnated with the virus of cholera.* The instances of the dissemination of cholera by such agency may be comprised in a group termed "dependencies of outbreaks." But this is to be observed, that while the aggregate of a certain number of outbreaks of soil-born cholera constitutes a reproduction, which again has its place in an epidemic, there is no evidence to shew, that, in this country, any aggregate of cases of cholera derived secondarily from true outbreaks through human agency, has ever, by the combination, produced the phenomena distinctive of a reproduction, that is, a provincial manifestation of cholera; and consequently, it never can have given rise to an epidemic." We direct the reader's attention to this passage, as it will give him a good idea of Dr. Bryden's style. And further, we would point to the sentence we have italicized above for it seems to us to contain the very pith of the whole matter. If, as Dr. Bryden there admits, cholera is transmissible from man to man, why in the name of goodness should he call this communicability of the disease it "dependencies of outbreaks;" this is decidedly one of the most unaccountable perversions of the English language we ever met with, a use of our mother tongue which few ordinary mortals will comprehend; but we live to learn, and Dr. Bryden may yet prove to be correct.

Our own view of the matter is, that having seized the fact of the transmissibility of the disease from one person to another, he might have applied this doctrine to the splendid array of facts and figures, which have been thrown in his way, and which point in an unmistakable manner to the extension of cholera in all directions, with man, from its endemic area over this country. He would have recognised in the monsoon, not an agent which bears some mysterious earth-born cholera inducing influence over the country, but the means by which men, and merchandize, are carried along our great rivers, bearing the disease from Dacca, Calcutta, and other large cities in Lower Bengal; first to Bhaugulpore, then to Patna, and so on to Benares, Mirzapore, and Allahabad, and away up the Jumna to Agra, and Delhi. From Mirzapore he might have traced the progress of cholera into the Central Provinces, with the vast traffic carried on in this direction, and from Nagpore to Bombay, which is, however, another centre of cholera; we cannot but feel there is not one single fact or argument, in the whole of Dr. Bryden's report, that tends to shake our confidence in these opinions, but a vast deal, which had we space at our command, goes to prove the truth of these views.

Dr. Bryden, however, thinks otherwise: he is of opinion (p. 87) that "the essentials for manifest epidemic progress are three—(1), the presence of the cholera miasm; (2), the humid atmosphere, which is in every case its vehicle; and (3), the prevailing wind to give direction and limitation to this humid atmosphere." Of this mysterious miasm, Dr. Bryden gives us very hazy ideas, it is true he writes with confidence about its "invading districts;" its "perennial existence;" its "life period;" it is "revitalized" and "reproduced," which is "equivalent of the budding of a tree or the flowering of a plant," but then, strange to say, it also swarms, "it is thrown off one swarm, up to the date of the exit of the swarm succeeding." In fact, if the reader can form a definite conception of the nature or properties of the cholera inducing matter, as described by Dr. Bryden it is more than we have succeeded in doing, although we have read every word of his report from beginning to end.

Much of the history of cholera in India given by Dr. Bryden was published last year in this journal, from the original documents at present in the office of the Inspector-General of Hospitals; it will be unnecessary, therefore, for us to weary the readers of the *Indian Medical Gazette*, by a reproduction of the facts so lately brought to his notice in the pages of this periodical.

From the above remarks, it is evident our views as to the nature of cholera are diametrically opposed to those of Dr. Bryden, and we have felt it to be our duty to write without reserve on so important a subject. At the same time we cannot conclude this Review without cordially thanking Dr. Bryden for his work on cholera; as a compilation of statistics bearing on the circumstances of the disease in Bengal, the report is invalnable, and will be eagerly consulted by professional men in this country, and even more so by those in Europe, for it contains a mine of information on the progress of cholera in India.

Extracts.

MODERN PHYSIOLOGY has been enriched by a number of ingenious instruments for assisting us in the study of the motions which take place in the body. By means of the ophthalmometer, the movements of the crystalline lens have been accurately measured, and the changes it undergoes when we look at near or distant objects absolutely determined. Nerve force, which until lately was supposed to travel with such wonderful rapidity, that "quick as thought" actually became a proverb, has, by means of Helmholtz's myograph, had the rate of its transmission along a nerve accurately estimated; and it turns out that, after all, this mode of energy moves with snail-like slowness when compared with the rate at which light and electricity travel. The movements which take place in the respiratory and circulatory systems are now being studied by means of numerous instruments of great ingenuity. We no longer trust our easily misled sense of touch when we want to accurately ascertain many obscure facts with regard to the pulse. In performing an experiment upon the circulatory system, we no longer estimate the force of the heart's action by merely feeling the pulse, or by observing the distance to which the blood is projected from a divided artery; we accurately measure the force and record the movements of the heart by means of suitable apparatus. These various instruments have been called "instruments of precision," inasmuch as they have rendered definite what could be only conjectural, or at best doubtfully ascertained, before their introduction. A great feature in many of them is the employment of a graphic method, by means of which the facts ascertained through their aid may be recorded. Thus we have the myograph, for recording the movements of muscles; the spirograph, for the respiratory movements; the cardiograph, kymograph, and sphygmograph, for registering movements which take place in the circulatory system. By means of these instruments, movements are recorded on revolving cylinders or on flat surfaces, so that a tracing or writing, indicating the character and extent of the motion, may be preserved. A very important advance has taken place in physiology since this ingenious method was introduced. We owe it to our countryman, Thomas Young, who invented it while prosecuting some researches in physics; but to Vierordt and Helmholtz in Germany, and Marey in France, must be awarded the credit of having introduced it into physiological research.—*Dr. Rutherford's Introductory Lecture on Physiology, reported in the Lancet.*

HYPODERMIC INJECTION OF SOLUTION OF MERCURY.—M. Bouilhon gives a formula for a solution of mercury, which is free from the ordinary disadvantages attending the injection of the soluble salts of this metal, such as suppuration, sloughings, &c. The salt he recommends is a double compound of iodide of mercury and sodium, the watery solution of which, in the proportion of 1·66 to 100 of water, can be injected subcutaneously to the extent of twenty drops, with a pure silver syringe, without danger. The salt is obtained by the saturation of a boiling hot solution of iodide of sodium (I : 4) with iodide of mercury, and subsequent dilution with twenty times its weight of cold water. Iodide of mercury is precipitated, whilst the double salt remains in solution. The crystals are evanescent, and possess a yellow colour when hydrated, but assume a lively red tint when dried.—(*Centralblatt, No. 35*)—*The Practitioner.*

WE learn from Mr. Wharton Jones that his opinion is in favour of a complete physiological antagonism between [illegible] been not atropine, an antagonism which is much more exact than that between atropine and morphia, which seems merely

a neutral, while the proportion between strychnine and calabar being essential and specific. (Mr. Jones had recently occasion to treat a case of complete paralysis of the third nerve of a thoroughly characteer with the latter, and declared some important results on its action, which are to be published).—*Ibid.*

CHLORODYNE AND COMPOUND TINCTURE OF CAMPHOR IN COLIC.—The medicine sold under the name of "chlorodyne" is a compound of chloroform and morphia, &c. but is not nearly so effectual as this combination. In twenty minims of chlorodyne there are, I suppose, only two minims and a half of chloroform; whereas I find that the smallest quantity of chloroform that will produce an appreciable effect. I have given as much as one drachm in a single dose, but ten to twenty minims is in most cases an effectual and safe dose. With the chloroform, one or two drachms of compound tincture of camphor should be prescribed if pain be moderate in severity, or ten, twenty, or forty minims of "Battley" or solution of mur. morphiæ, if more severe. This combination speedily relieves pain, and induces sleep *within a few minutes*, and its effects are more lasting than those of an opiate alone. It ought to be given in some thickish solution, such as mucilage, otherwise the chloroform will fall to the bottom.—*Dr. Marshall of Montclair, in the Glasgow Medical Journal.*

SPONGE TENTS.—Knowing the fact that absolute or *strong* alcohol will quickly *set* the fibres of common sponge, after having been moulded or compressed into any given size or shape, I was led to the following quick and easy method, of preparing sponge tents, tampons, &c. :—

The sponge is first thoroughly moistened with water and pressed as dry as the strength of the hand will permit, then having trimmed it into the desired shape and size by the hand, or by pressing into a mould or any other tube or mould, it is immersed into the alcohol. If the spirit is sufficiently strong (90 to 100 per cent.), the sponge is immediately set into the given shape, which it retains perfectly after the pressure or mould is removed. It is then hard, firm, and inflexible, and may be trimmed to a sharp point or any other desired shape. To restore it to its former size and shape, it is only necessary to moisten it with a few drops of water. The alcohol sets the sponge perfectly, whether the amount of compression be much or little, so that the degree of dilatation, attainable by use of tents thus prepared, will, of course, depend upon the size after moulding, and the degree of pressure used. As this process of preparation works perfectly and without delay, its advantages are obvious.—*Dr. J. B. Hough, in Cincinnati Lancet and Observer.*

DR. T. D'A. LUCUS, of the McGill University, gives the following account of the manner in which the trichina passes from the stomach in a semi-developed condition, it passes at once into the small intestine, where it becomes freed from its cyst, and increases rapidly in size; here the generative apparatus becomes apparent, and in from three to thirty-seven days it brings forth its brood; having accomplished this function its fell effects cease, it then perishes and passes off with the fæces.

The young trichinæ, liberated within the small intestine, immediately pierce its walls and pass to the striated muscular tissue throughout the body, the heart excepted, by the process of vermiculation, unaided by the current of the circulation; here they increase greatly in size, and their intestinal canal becomes recognizable. In the course of twenty to twenty-five days from the period of leaving the young trichinæ by an unknown process, perhaps as the caterpillar forms its cocoon as suggested by Langenbeack, they encyst themselves, retaining the power of [illegible] for a good many years.—*Canada Medical Journal.*

MEDICAL SCIENCE.—*The relation of the marrow medulla to the blood.*—*The Journal Medical Journal*, in abstracting a recent paper, by Herr Neumann, in the *Centralblatt*, calls attention to the fact that Neumann's startling theory that the marrow developes blood-cells, has received confirmation by the observations of M. Bizzozero. Among other things, this observer says that the conditions of the marrow [illegible] of frogs in winter, is consistent with the supposition, besides [illegible] important argument in favour of the theory, that marrow is a blood-gland. In winter, the white corpuscles in the blood of the frog are not half so numerous as they are in summer, and in winter the marrow consists almost entirely of fat-cells, whereas in summer it is chiefly [illegible] blood-cells. He has [illegible] the results in [illegible] cases of [illegible] from typhus fever, and observed in each case an enormous increase of cells containing blood corpuscles.—*Popular Science Review.*

THE USES OF CARBOLIC ACID.—MR. READING, F.G.S., believes that this tar-product in a dilute form, is an antidote to all parasitic life; it is known now to destroy all the low forms of life, whether animal or vegetal. It is now certain, he says, that carbolic acid will kill all septic germs, and thus remove many *causes* of disease, that glycerine is a very powerful healing agent, that carbolic acid is freely *soluble* in glycerine, and that their *united* application has resulted in the speedy cure of some of the most dangerous diseases. The following are directions for use:—As a rule, it is better to dissolve the crystallized carbolic acid (Calvert's) in the proportion of one part by weight of the acid to six of glycerine (*carbolate of glycerine*). In this state it can be equally diluted to any degree of strength. In general, a *dose* of carbolic acid is one grain in an ounce of water. As a *gargle*, one or two grains to an ounce of water. As an *injection*, one grain to four ounces of water. As a *lotion*, 15 grains to an ounce of water. As an *ointment*, 15 grains to an ounce of benzoated lard. As a *liniment*, one part to 20 of olive oil. As a *plaster*, one part of carbolic acid to three parts of shellac. The crystallized carbolic acid to be used as a caustic. The carbolate of glycerine, as above, use in one or two drop doses, internally. Antiseptic oil for abscesses, one part of acid to four of boiled linseed oil. Antiseptic putty, six spoonfuls of the antiseptic oil mixed with whiting. Aqueous solution of carbolic acid is one part of acid to 40 of water, (one ounce of acid to a quart of hot water well agitated and filtered.) Sick-rooms, to *disinfect*, place a portion of the dissolved crystals in a porcelain dish, and float it in a larger vessel of hot water. *Disinfecting purposes* generally, one pound of *crystals* to six gallons of water. *Fluid*, one part to 80 of water. *Powder*, one ounce of crystals with four pounds of slaked lime. For *drains*: one pound of the fluid carbolic acid to five gallons of warm water. *Tooth-ache* is often cured with one drop of carbolate of glycerine, and *diarrhœa* arrested in half an hour with two drops in a wine-glass of water. In all cases of parasitic life it is advisable to commence with very dilute carbolate of glycerine. Inasmuch as carbolic acid will destroy the power of *vaccine virus*, it becomes an interesting inquiry as to the possibility of using carbolic acid internally as a preventive, so as to fortify the human system against the incoming of zymotic diseases.—*Pharmaceutical Journal.*

THE TELEPHONOGRAPH: an instrument invented by M. Reynal, the French architect. It is a combination of telescope and prism, and presents great advantages over the camera lucida. As the name implies, the new instrument enables a draughtsman to reproduce objects at a great distance on a large scale.—*Scientific Opinion.*

A NEW AND VERY EASY method of acquiring and preserving talent and intelligence has been discovered. Simply to eat fish. Our authority is the celebrated Agassiz, who, in his report to the Legislative Council of Massachusetts on the preservation and propagation of fish, writes as follows:—

"It enters largely into the requirements of the human organism. It is an aliment refreshing to the system, especially after intellectual fatigue. No other nutriment provides for the outlay, so to speak, of the expenses of the head, so completely as fish, and the proof of the fact may be found all over the world. The inhabitants of places close to the sea are always the most intelligent.

"Fish contain phosphorus in great quantity, a chemical element required by the brain for its healthful development. It is not to [illegible] that the excessive use of fish can make a wise man out of an idiot, but only that the brain ought not to be allowed to want its essential elements."—*The Medical Press and Circular.*

THE [illegible] OF TRANSFUSION OF BLOOD, which have been published by Professor Landors of the University of Greifswald, state that transfusion has been practised 99 times in cases of hæmorrhage. Out of these 11 cases were so grave, that no favourable result could be expected. In the 88 remaining, in 67 the result was satisfactory, in 3 it was doubtful. The operation has been performed in 12 cases of poisoning, in 3 of which the results were favourable.—*Ibid.*

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